



FRIDAY, MARCH 22, 1878.

Train Accidents in February.

The following accidents are included in our record for the month of February:

REAR COLLISIONS.

On the afternoon of the 1st a snow-plow driven by two engines struck the rear end of a freight train on the Lake Shore & Michigan Southern road, near Ashtabula, O. Both the engines and four cars were badly broken, two trainmen killed and three badly hurt.

On the night of the 3d a passenger train on the Vermont Central road broke in two near Essex Junction, Vt. The signal bell on the engine being rung, the enginemen stopped and the detached cars ran into the train, damaging some cars and injuring two passengers slightly.

Early on the morning of the 3d a freight train on the Erie road ran into a preceding freight near Alfred, N. Y., damaging the engine and wrecking five cars.

On the morning of the 6th a passenger train on the Erie Railway ran into the rear of a freight which was going into a siding at Cohocton, N. Y., and an engine and several cars were badly broken, injuring the engineman slightly.

About noon on the 6th a special train on the Kansas City, St. Joseph & Council Bluffs road ran into the rear of a freight which was standing on the track at East Leavenworth, Mo., wrecking the caboose.

On the 6th a passenger train on the Nashua & Rochester road ran into a freight car, which had been blown by the wind from a siding at Gonic, N. H., upon the main track. The car and an engine were badly damaged.

On the evening of the 9th a passenger train on the Flushing, North Shore & Central road struck a freight car which was standing on the track in the yard at Hunter's Point, N. Y. The engine was badly damaged.

On the 11th a freight train on the Chicago, Burlington & Quincy road ran over a misplaced switch and into some freight cars standing on a siding at Wataga, Ill. The engine was damaged and one car wrecked.

On the afternoon of the 12th a west-bound freight train on the Pittsburgh, Fort Wayne & Chicago road ran into the rear of a gravel train at Enon Valley, Pa. The engine was badly broken, the engineman badly and the fireman slightly hurt.

On the evening of the 15th a freight train on the Pittsburgh, Fort Wayne & Chicago road ran into the rear of a preceding freight near Van Wert, O., damaging the caboose.

Early on the morning of the 17th a freight train on the New York Central & Hudson River road ran into the rear of a preceding freight near Fort Washington, N. Y., wrecking several cars.

On the morning of the 20th a freight train on the Intercolonial Railway broke in two near Tartague, P. Q., and the detached cars ran into the locomotive, breaking the tender and injuring the fireman very badly.

On the evening of the 21st an express train drawn by two engines on the New York Central & Hudson River road ran into some cars which had broken loose from a freight train as it was going on a siding at Low Point, N. Y. Several freight cars were completely wrecked, the first express engine thrown across the track and badly broken and the second engine and tender jammed together and much damaged. An engineman and fireman were slightly hurt, and both tracks blocked all night. The freight conductor sent back a signal when the train broke, but the time was too short.

On the night of the 21st, a freight train on the Pittsburgh, Fort Wayne & Chicago road ran into the rear of a preceding freight, at Larwill, Ind., wrecking three cars and blocking the road two hours.

Late on the night of the 21st a freight train on the New York Central & Hudson River road ran into the rear of a preceding freight, near Herkimer, N. Y., wrecking several cars and scattering the wreck so as to block three of the four tracks.

On the evening of the 23d, as a freight train on the Central Railroad of Georgia, was near West End, Ga., the engine broke loose, and before the engine-man could stop it or overcome the sudden impetus, it ran into the preceding freight, wrecking several cars and damaging the engine.

Late on the night of the 24th, as a passenger train on the Richmond, Fredericksburg & Potomac road was near Milford, Va., two sleeping cars at the rear of the train broke loose. The engineman, hearing the signal bell rung, at once put on the brakes, and the detached cars ran at great speed into the rear of the train, jamming the cars together and damaging them badly. Four passengers, who had gone out on the platform of the smoking car, were caught between the cars, and two of them were fatally, and the other two badly hurt; one man inside the car was thrown against the stove and badly burned. One of those fatally hurt was private secretary to the President of the road. The train was running very fast and was on a down grade when the accident took place.

On the afternoon of the 25th, on the Chicago & Northwestern track, in Milwaukee, Wis., a Milwaukee, Lake Shore & Western passenger train ran into the rear of a Northwestern freight which had stopped to avoid a gravel train. Two cars were wrecked and several others damaged, the wreck being piled up in a narrow cut in a way that made it very difficult to remove.

On the 26th, a passenger train on the Marietta & Cincinnati road, ran into the rear of a freight at Athens, O., breaking the caboose. The accident was caused by a misplaced switch.

On the evening of the 27th an express passenger train on the New York Central & Hudson River road ran into the rear of a freight train near Weedsport, N. Y. The passenger engine was badly broken, three baggage and express cars piled up across the track, several freight cars wrecked and two trainmen hurt.

BUTTING COLLISIONS.

On the afternoon of the 3d there was a butting collision between a passenger train and a shifting engine on the Allegheny Valley road in Pittsburgh, Pa. Both engines were slightly damaged.

On the morning of the 13th, on the New Castle Branch of the Pittsburgh, Fort Wayne & Chicago road, near Newport, Pa., there was a butting collision between a passenger and a freight train, by which both engines and several cars were wrecked, an engineman and a fireman killed, and an engineman and a brakeman hurt.

DERAILMENTS, BROKEN RAIL.

On the afternoon of the 9th a passenger train on the Savannah & Charleston road struck a broken rail near Green Pond, S. C., throwing two cars from the track. The cars were badly damaged and an express messenger was hurt.

On the night of the 10th the engine and two cars of a passenger train on the Louisville & Nashville road were thrown

from the track by a broken rail near Big Sandy, Tenn. The engine upset and the postal car was thrown across the track with one end in the mud.

On the evening of the 19th a freight train on the Marietta & Cincinnati road was thrown from the track by a broken rail at Londonderry, O., and one car went into the ditch. The road was blocked four hours.

DERAILMENTS, BROKEN TIRE.

On the morning of the 7th the engine of a passenger train on the Rome, Watertown & Ogdensburg road was thrown from the track by the breaking of a tire on a driving wheel.

DERAILMENTS, BROKEN TRUCK.

On the night of the 4th two cars of a coal train on the Chicago, Milwaukee & St. Paul road were thrown from the track and wrecked near Palmyra, Wis., by the breaking of a truck.

On the evening of the 19th one truck of a car in a freight train on the Marietta & Cincinnati road broke down and the car went off the track, blocking the road three hours. The car was overloaded.

DERAILMENTS, BROKEN BRIDGE.

On the night of the 4th a freight train on the Cairo & Vincennes road went through a bridge at Stone Fort, Ill., and the engine and several cars were piled up in a bad wreck.

On the 5th a repair train on the Houston & Texas Central road broke through a small trestle near Dallas, Tex., the whole train falling some 10 feet, with considerable damage to engine and cars. Two trainmen were badly hurt.

DERAILMENTS, SPREADING OF RAILS.

On the morning of the 6th five cars of a freight train on the Central Branch, Union Pacific, ran off the track near Monrovia, Kan., and two of them were completely wrecked, blocking the road all day. The accident is said to have been caused by the spreading of the rails, resulting from the softening of the road-bed by heavy rain.

On the evening of the 22d a freight train on the St. Louis, Iron Mountain & Southern road was thrown from the track at Peach Orchard, Ark., by the spreading of the rails, and several cars were wrecked. The spreading was caused by the softening of the road-bed after heavy rains.

On the morning of the 23d a freight train on the Southern Railroad of Long Island was thrown from the track at Pearl-sall, N. Y., by the spreading of the rails, blocking the road three hours.

DERAILMENTS, WASH-OUT.

On the evening of the 18th a freight train on the Central Pacific ran into a washed-out culvert near Niles, Cal., and several cars were piled up on the engine. The road was blocked for a day.

On the 22d a passenger train on the New Britain Branch of the New York, New Haven & Hartford road was thrown from the track near Meriden, Conn., where the road-bed had been washed out during a heavy rain storm.

DERAILMENTS, SNOW.

Early on the morning of the 1st a passenger train on the Eastern Railroad, having two engines and a snow-plow in front, struck a heavy drift in Revere, Mass. The plow was thrown up on end, the forward engine running under it, so that both were badly damaged. The second engine and all the cars were thrown from the track. One trainman was fatally hurt and two others less severely injured.

On the morning of the 1st a passenger train on the Long Island Railroad ran off the track in a heavy snow drift near Jamaica, N. Y.

On the afternoon of the 2d an engine and snow-plow on the Eastern Railroad ran off the track near Revere, Mass., blocking the road some time.

DERAILMENT, ACCIDENTAL OBSTRUCTION.

On the night of the 6th eight cars of a freight train on the Southern Minnesota road were thrown from the track near Isinours, Minn., by a brake-beam falling on the track, and several of them were badly broken.

DERAILMENTS, MISPLACED SWITCH.

Early on the morning of the 3d a freight train on the Indianapolis & St. Louis road was thrown from the track near Charleston, Ill., by a misplaced switch. The engine upset and eight cars were wrecked. A brakeman was badly hurt.

On the morning of the 7th the engine and two cars of an express train were thrown from the track by a misplaced switch in Brooklyn, Cal.

On the evening of the 11th the engine of a passenger train on the Lehigh Valley road was thrown from the track by a misplaced switch in Phillipsburg, N. J.

On the morning of the 17th a work train on the Pittsburgh, Wheeling & Kentucky road was thrown from the track by a misplaced switch in Wheeling, W. Va. The caboose, which was in front of the engine, went down a bank, but the coupling held long enough to allow the men to jump off.

Early on the morning of the 28th a passenger train on the Chicago, Rock Island & Pacific road was thrown from the track by a misplaced switch at Moline, Ill., doing a little damage, and blocking the road several hours.

DERAILMENTS WITH MALICIOUS INTENT.

Very early on the morning of the 10th an express train on the Pittsburgh, Cincinnati & St. Louis road struck a tie which had been laid across the track near Xenia, O. The engine was thrown down a bank and wrecked, injuring the engineman fatally and the fireman less seriously.

On the 20th the engine of a construction train on the Dallas & Wichita road was thrown from the track near Dallas, Tex., by a spike driven beside the rail. The road was blocked for a day.

DERAILMENTS, UNEXPLAINED AND MISCELLANEOUS.

On the night of the 1st seven cars of a freight train on the Hannibal & St. Joseph road were thrown from the track near Hall's, Kan.

On the night of the 4th a passenger train on the Intercolonial Railway ran off the track near Metapedia, P. Q. One car upset and was badly damaged, injuring a passenger and blocking the road six hours.

On the 6th a passenger train on the Richmond & Danville road ran off the track near Pelham, N. C. The engine was badly broken and two cars damaged, blocking the road eight hours.

On the evening of the 6th a new engine making a trial trip over the Kansas Central road ran off the track at Soldier Creek, Kan., and rolled over down a bank.

Late on the evening of the 6th a number of cars of a coal train on the Erie ran off the track near Port Jervis, N. Y., blocking the road all night.

On the night of the 6th a freight train on the Chicago, Rock Island & Pacific road ran off the track near Brighton, Ia.

On the morning of the 7th a passenger train on the Flushing, North Shore & Central road ran off the track at Springfield Junction, N. Y., and one car upset and was damaged.

On the 7th some cars of a freight train on the Pittsburgh, Fort Wayne & Chicago road ran off the track near Warsaw, Ind.

On the morning of the 8th a Chicago, Burlington & Quincy engine ran off the track near the round-house in Burlington, Ia.

On the 8th a freight train on the Hannibal & St. Joseph road ran off the track near St. Joseph, Mo., wrecking several cars.

On the night of the 11th a freight train on the Chicago, Rock Island & Pacific road ran off the track near Edgerton, Mo., blocking the road all night.

On the morning of the 12th a passenger train on the Fort Royal Railroad ran off the track at Ellenton, S. C., blocking the road three hours.

On the 18th several cars of a coal train on the Erie Railway ran off the track in Hornellsville, N. Y. Some of the cars ran against one side of a bridge, knocking down a post and breaking several tie rods.

On the morning of the 19th a freight train on the Erie Railway ran off the track at Santee Switch, N. Y., blocking the road four hours.

On the 28th some cars of a freight train on the Troy & Boston road ran off the track at Blackinton, Mass., and two of them were badly wrecked.

On the night of the 26th the sleeping car in an express train on the Indianapolis & St. Louis road jumped the track near Hillsboro, Ill., and upset down a bank. The car was damaged, three trainmen and three passengers slightly hurt.

On the 27th a stock train on the Wabash road ran off the track near Griggsville, Ill., wrecking several cars and injuring a brakeman.

On the afternoon of the 28th a car broke loose from a coal train on the Buffalo, New York & Philadelphia road at Keating Summit, Pa., and ran back seven miles to Emporium at a great speed, being finally thrown off by an open switch prepared for it, notice of its coming having been sent by a telegraph operator.

On the night of the 28th a freight train on the Pittsburgh, Fort Wayne & Chicago road ran off the track at Alida, O., blocking the road several hours.

BOILER EXPLOSION.

On the 5th as a freight train on the Boston & Albany road was near Becket, Mass., the fire-box crown sheet gave way and the steam and water were driven into the fire-box and out through the door and ash-pan.

OTHER ACCIDENTS.

On the morning of the 22d the caboose car of a freight train on the Carolina Central road caught fire near Shoe Heel, N. C., and was destroyed.

This is a total of 67 accidents, whereby eight persons were killed and 31 injured. Five accidents caused the death of one or more persons; 11 caused injury but not death, while 51, or 76.1 per cent. of the whole number caused no injury serious enough for record. This is an unusually large proportion of accidents without recorded casualties.

These accidents may be classed as by their nature and causes as follows:

COLLISIONS:	
Rear collisions.....	20
Butting collisions.....	2
	— 22

DERAILMENTS:	
Unexplained.....	18
Broken rail.....	3
Broken tire.....	1
Broken truck.....	2
Broken bridge.....	2
Spreading of rails.....	3
Wash-out.....	2
Snow.....	3
Accidental obstruction.....	1
Misplaced switch.....	5
Malicious obstruction.....	2
Runaway car, broken coupling.....	1
	— 43

Boiler explosions.....	1
Car burned while running.....	1
Total.....	67

Five collisions were caused by trains breaking in two; two by misplaced switches; one by wind blowing a car out of a siding, and one by snow. Of the two broken bridges one was a wooden bridge, concerning which we have no particulars; the other was a small wooden trestle. There were 19 accidents caused directly by defect or failure of road or equipment.

Of the collisions two were between passenger trains, 10 between a freight and a passenger and 10 between freight trains; 15 derailments were of passenger and 28 of freight trains, and both the other accidents were to freight trains. The 22 collisions killed six and injured 16 persons, while the 43 derailments killed only two and injured 15.

As compared with February, 1877, there is an increase of 11 accidents and of three in the number killed, and a decrease of 10 in that of injured.

The month was generally a favorable one, with only one heavy snow storm, chiefly over the Eastern and Middle States, and little or no severe cold. The number of accidents was swelled by an unusual number of unexplained derailments, but the casualties are fewer than usual. No very fatal or otherwise remarkable accident is recorded. Seven accidents, five derailments and two collisions, caused by misplaced switches, are too large a number, making over 10 per cent. of all the accidents the direct result of carelessness in this respect. The large number of collisions resulting from broken trains is notable, and one accident of this class was the most fatal of the month. It appears also from the record that there is too much carelessness in running freight trains in gangs; either they are run too close together, or there is a neglect to use the proper signals. Perhaps both causes contribute.

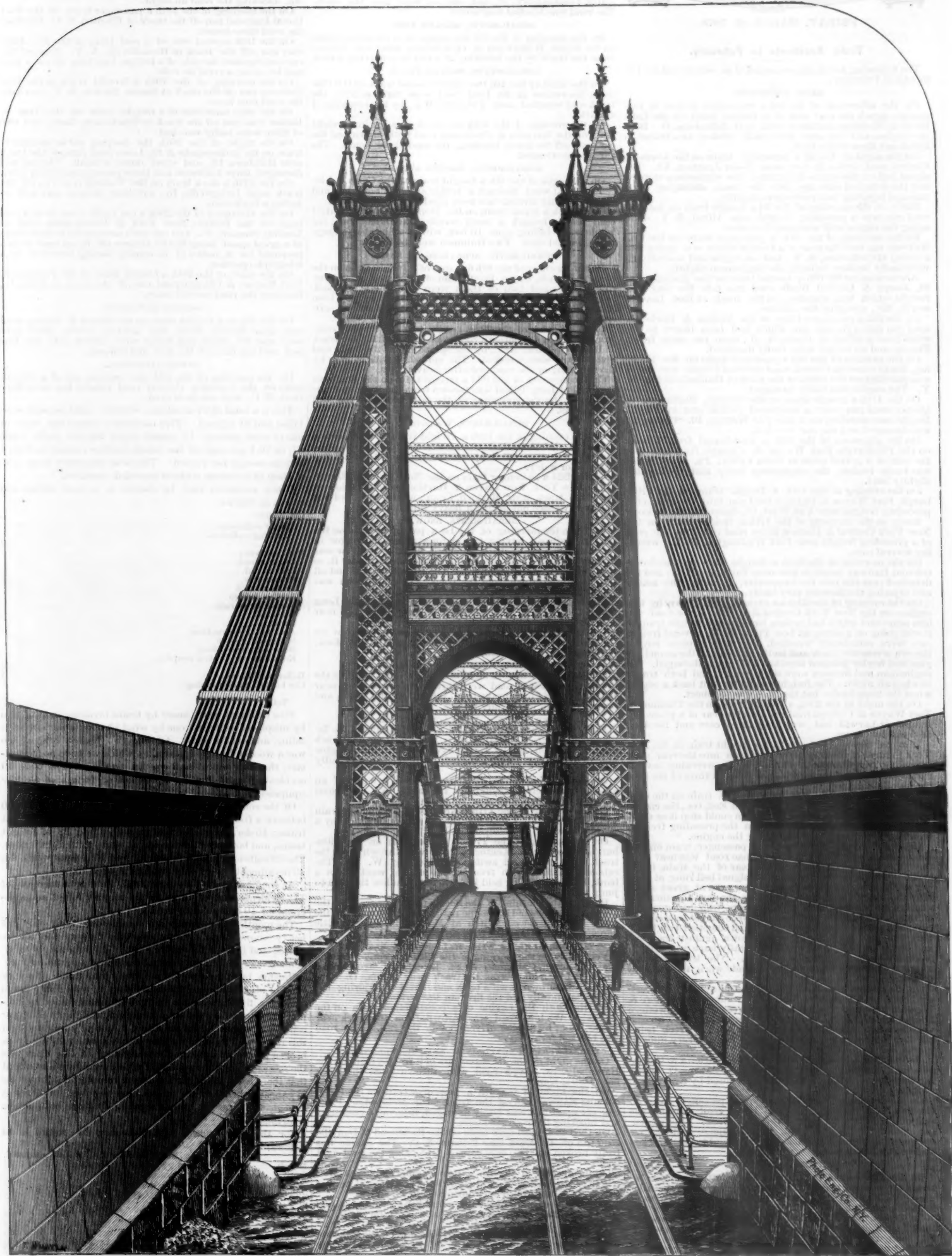
For the year ending with February the record is as follows:

	No. of Accidents.	Killed.	Injured.
March.....	58	9	31
April.....	69	13	34
May.....	46	12	41
June.....	49	16	92
July.....	53	21	144
August.....	98	46	230
September.....	84	20	86
October.....	82	31	112
November.....	83	23	70
December.....	83	6	26
January.....	75	23	77
February.....	67	8	31
Totals.....	830	230	966

The averages per day for the month were 2.39 accidents, 0.29 killed, and 1.11 injured; for the year they were 2.27 accidents, 0.63 killed, and 2.65 injured. The average casualties per accident were, for the month, 0.119 killed, and 0.463 injured; for the year, 0.277 killed, and 1.163 injured.



Fig. 2.



**POINT BRIDGE, PITTSBURGH, PA.,**

*Built by The American Bridge Company, Chicago, Ill. Edward Hemberts, Engineer. End View, Looking from the West.*



Point Bridge.

II.

Plates II. and III. in this number of the *Gazette* represent two end views of this bridge, the one (Plate II.) showing a view looking from the west and toward the bridge and showing the approach and the town from that end. The other view is taken from the centre of the bridge looking toward the west. These engravings will give a good idea of the magnitude of this interesting structure. Next week we will give detailed drawings with a full description of the work.

Contributions.

The Invention of the Method of Stiffening Chains used in the Point Bridge.

CHICAGO, March 18, 1878.

TO THE EDITOR OF THE RAILROAD GAZETTE:

In the issue of March 15 your valuable paper contains a general view and description of the Point Bridge at Pittsburgh.

Enumerating the various previous plans, executed or proposed, for stiffening suspension bridges, the article omits one, which I deem it my duty to call attention to, in order to do justice to an old friend of the writer of this—the Austrian

The actual working time devoted to the erection of this great structure was:

Sunday.....	16 hours.
Monday.....	16 "
Tuesday.....	12 "
Wednesday.....	16 "
Thursday.....	7 "
Total.....	67 hours.

And for the whole 12 hours on Tuesday the force labored under the disadvantages caused by a violent northeast storm. The work was directed by Mr. W. H. Brown, Chief Engineer of Maintenance of Way of the Pennsylvania Railroad, and his assistants, who certainly deserve great credit for the rapidity with which they completed the structure, the lack of which was causing daily great pecuniary losses to the company:

"The completion on Thursday of the great temporary trestle bridge across the Raritan River at New Brunswick marks the accomplishment of the most remarkable feat in this branch of engineering ever performed in any country. The rapid construction of long and low trestle structures has been frequent, and during the war we had some surprisingly quick building of high bridges of this character, but greatly lacking in the important element of solidity. At New Brunswick, however, there is at once a long and high bridge, which seems to be as staunch as any bridge could be, yet has sprung into being with almost magical rapidity. At seven o'clock Saturday morning the old bridge was in ashes. At ten minutes past 2 o'clock Thursday afternoon an enormous train passed in safety over the new

men did all their framing, six handled all the timbers, fifteen—aided by powerful 'crabs' to do their hoisting—placed the completed bents in position, and the remainder of their force was employed in driving bolts, spiking on braces, placing stringers and ties, etc., so as to use each man to the best possible advantage. The Jersey men had no other hoisting apparatus than block and tackle; each timber was handled by twenty or more men, and had to be carried long distances through deep mud, from the framing ground down to where it was to be employed."

Transportation in Congress.

In the Senate on the 14th:

Mr. McMillen, of Minnesota, presented resolutions of the Minnesota Legislature favoring an extension of land grant to aid in the construction of the Southern Minnesota Railroad. Referred to the Committee on Railroads.

Mr. Teller, of Colorado, introduced a bill to regulate passenger fares and freight traffic on the Denver Pacific Railway and Kansas Pacific Railway. Referred to the Committee on the Judiciary.

Mr. Matthews, of Ohio, argued in favor of substituting the Railroad Committee bill for the Pacific railroads sinking fund, in place of the Judiciary Committee bill.

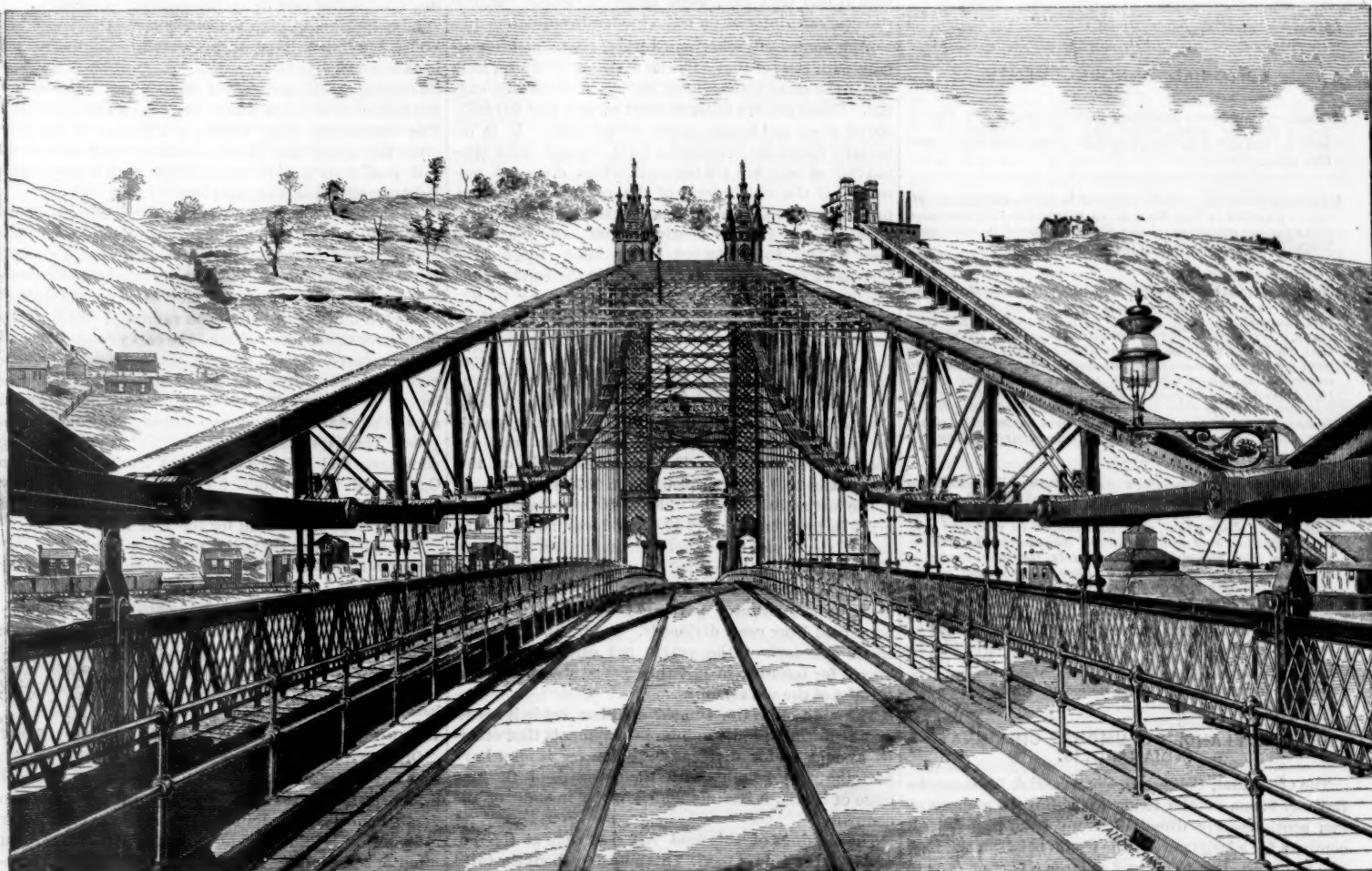
In the Senate on the 18th:

Mr. Garland, of Arkansas, from the Committee on Territories, reported favorably on the joint resolution disapproving of an Act of the Territory of Arizona granting a charter to the Southern Pacific Railroad Company. Placed on the calendar.

The Senate then resumed the consideration of the Pacific Railroad Sinking Fund bill.

Mr. Christiancy, of Michigan, a member of the Judiciary

Fig. 3.



POINT BRIDGE, PITTSBURGH, PA.

Built by The American Bridge Company, Chicago, Ill. Edward Hemberle, Engineer. View Looking from the Centre toward West End.

Government engineer, Joseph Langer, of Prague. Said Joseph Langer contemplated the stiffening of arches, as well as suspended chains or cables, in precisely the same way as the stiffening of chains in the Point Bridge has been effected, as far back as 1864, when I knew him in Europe.

In 1869 or 1870 he sent two pamphlets to the writer to Chicago, which demonstrate graphically his ideas; said pamphlets being issued in Prague in 1869, and they are still in my possession.

Charles Bender, Esq., a well-known civil engineer of New York, had the same design patented in this country about 1871, without being aware at the time of the fact that Mr. Joseph Langer had conceived the idea before him, and had published said pamphlets. But finding out this fact after the issue of the patent to him, he had it printed on his circulars, to do justice to the original inventor.

CHICAGO, Ill.

A. GOTTLIEB, C. E.

Quick Work—Replacing the New Brunswick Bridge.

The following account of the construction of a temporary trestle bridge to replace the one burned recently at New Brunswick, N. J., on the Pennsylvania Railroad is copied from a Philadelphia paper, with some corrections by the engineer in charge. Work on this bridge was begun on the morning of Sunday, March 10, and about two o'clock on the afternoon of the following Thursday the first train passed over it. Even this, however, does not give an adequate idea of the rapidity with which the work was done.

one. And this notwithstanding the fact that there was not on the ground at dusk on Saturday evening enough timber to make a dog kennel, that unprecedentedly high tides interfered greatly with the work, that during one day little could be done by reason of the rain, and that a furious storm stopped everything one whole night. Practically this immense structure, 916 feet in length, and from 35 to 54 feet in height, was completed in 67 hours actual working time.

"While the old bridge was blazing, telegraphic orders were summoning carpenters from all along the Middle, Philadelphia and New York divisions of the road. Contractors in Newark and Jersey City were drawn upon for a force of laborers. When the men and the lumber for them to work upon reached the ground on Saturday evening it was arranged that the men from the Pennsylvania divisions of the road should build out half of the new bridge from the southern end, and the New York Division the northern half, meeting in the river. In point of numbers the Pennsylvanians were at a disadvantage, but they had a wealth of experience in just this kind of work that stood them in good stead, and they were all skilled carpenters. The Jersey men, as those working on the north end called themselves, numbered from 150 to 250, against the others 75 to 100, but many of them were simply laborers, furnished by contractors, and, of course, neither skilled nor particularly anxious to expedite matters.

"In some way, however, a spirit of keen emulation sprang up between the two parties. It did not seem to the Jersey men that the Pennsylvanians were doing much on Saturday night and Sunday morning, and they were looked upon as an easy lot to beat, but the error of that expectation was soon shown when the boys from the Keystone State got to work. They had been making preparations for the employment of mechanical forces instead of manual labor. The result was that when they really commenced work, twelve

Committee, spoke in favor of the bill reported by the Judiciary Committee, and in opposition to that reported by the Committee on Railroads.

In the Senate on the 19th:

Mr. Matthews, of Ohio, said he was directed by a majority of the Committee on Railroads to report back Senate bill amendatory of and supplementary to the act to incorporate the Texas Pacific Railroad Company, introduced by Mr. Johnston, of Virginia, on the 10th of December last, and another introduced by Mr. Dorsey, of Arkansas, on the 11th of December, with a substitute, and to recommend its passage. Placed on the calendar.

He also reported from the same committee a Senate bill to authorize the Southern Pacific Railroad Company to extend its railroad and telegraph line easterly, from its present eastern terminus in Arizona to a point on the Rio Grande at or near El Paso, and to aid in building the same, and said it was reported without amendment and without recommendation. Placed on the calendar.

The Senate then resumed the discussion of the Pacific railroad sinking-fund bill and

Mr. Morgan, of Alabama, argued in favor of the bill reported by the Judiciary Committee.

In the Senate on the 20th:

The Pacific Railroads sinking-fund bill came up as unfinished business. The bill reported by the Pacific Railroads Committee was discussed by Messrs. Mitchell, of Oregon; Thurman, of Ohio, and Teller, of Colorado, but no conclusion was reached.

—Hon. Charles Sitgreaves, for many years a director of the Belvidere Delaware Railroad Company, died at his residence in Phillipsburg, N. J., March 16. He was a prominent and influential man in Northern New Jersey, and represented his district for several terms in the State Legislature and afterward in Congress.





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## EDITORIAL ANNOUNCEMENTS.

**Passes.**—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

**Addresses.**—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

**Advertisements.**—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

**Contributions.**—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

## THE CLEVELAND, COLUMBUS, CINCINNATI &amp; INDIANAPOLIS.

The Cleveland, Columbus, Cincinnati & Indianapolis Railway is one of the roads extending in a more or less southwesterly direction from Lake Erie which compete for a large part of the traffic between the East and the West, but do not get so large a part of it as to rank with the most important feeders of the trunk lines, and, except to New England, form sections of long lines between the chief Western cities and the East. They have, however, a powerful influence, due perhaps quite as much to the harm they can do their competitors as to the good they can do their proprietors. In this category may be classed the Atlantic & Great Western, and the Wabash as well as the road just named, though the latter perhaps does not depend to so great an extent on through business. None has a very large business of any kind. All have quite moderate earnings and can only earn interest on a very moderate capital. They usually struggle hard for through traffic, and they frequently get a great deal, but being sections of long routes they get less per mile for carrying it than their shorter rivals, and when the latter, as has frequently happened of late, get scarcely the bare cost of hauling, these "diagonal" roads, as we may call them, naturally suffer. The Cleveland road, as we will call this one with the long name, is especially a sufferer at such times, because its through freight is an exceptionally large proportion of its whole business. In 1877 the through freight was 79 per cent. of its total freight traffic. It is true that it has a smaller through business than some other roads—than the Lake Shore or Michigan Central or Pittsburgh, Cincinnati & St. Louis, for instance. In 1877 it was altogether equivalent to about 105 car-loads each way daily between Cleveland and Indianapolis. The road is a prominent connec-

tion of Cincinnati to the East as well as of Cincinnati and the country beyond, and it is also a small part of a Chicago line, so that its through business does not in any case use the whole of its roads. But if its through freight is not a very large traffic—equivalent say to two fully-loaded trains each way daily over its entire mileage—it is still the largest part of what it has to live upon; and so low rates and railroad wars make terrible havoc with its profits.

The low rates, however, seem to have reached their limit in 1876. At least, the report of this, as of the Pennsylvania Railroad, shows a considerable advance in 1877 over the absurdly low rates of 1876. This increase was on the average 8½ per cent. It still left the rate 11 per cent. lower than in 1875, however, and as 1877 was a bad year for traffic, the freight earnings were the smallest the road has ever made with its present mileage. The average rate of 1875, which was almost exactly one cent per ton per mile, would have added more than \$300,000 to the company's profits in 1877, that is, would have made the surplus over interest, rentals and other fixed charges six times as great as it was actually. Even this, however, would have been less than 2½ per cent. on the capital stock of the company, which recalls us to the statement that the road is one that can, even under favorable circumstances, earn interest on but a moderate capital.

And, compared with many other roads, and especially with the parallel Atlantic & Great Western, now under the same management, it has a moderate capital. There are 391 miles of road owned and \$21,055,000 of stock and bonds, or \$53,850 per mile. It is especially fortunate in having a light funded debt (\$6,055,000) of only \$15,486 per mile. This does not represent all the obligations of the company, however, for it leases a road on terms which result in a loss, amounting in 1877 to nearly \$180,000, and since the lease in 1871 to \$1,352,000. This lease requires the Cleveland company to pay interest on the bonds of the Cincinnati & Springfield Company, amounting to \$2,651,000; and as the earnings are not equal to this, these bonds may also be counted among the obligations of the Cleveland company. The latter also has a contract, in connection with the Pittsburgh, Fort Wayne & Chicago Railway, with the Indianapolis & St. Louis Company, by which the first two become responsible for certain losses in working the latter's line from Indianapolis to St. Louis. The advances made on this account in 1877 were \$74,000 and in 1876 \$205,000.

The last addition to the mileage of this company was made in 1868, but in 1872 \$2,000,000 was added to the capital stock, and since that year more than \$3,000,000 has been added to the funded debt. In those days, when the net earnings were larger, and the yearly interest charge and guarantee payments very small, the company paid 7 per cent. dividends. In 1872 and 1873 only about one-sixth of the yearly net earnings were required for interest; in 1877 this charge absorbed seven-eighths of the net earnings.

The addition to the funded debt has made it necessary to devote profits to interest payments that otherwise could go for dividends. Whatever it may have been that was bought with the proceeds of the new issue of bonds, it has not added to the income of the company.

The earnings of this road last year were at the rate of \$7,434 per mile of road. This puts it in about the third rank of railroads, these earnings being exceeded by a great many roads in the West as well as the East, and being not a great deal above the average of railroads in the United States. Its average rates, from circumstances partly indicated above, are always extremely low—among the lowest reported in this country—and its working expenses are extremely light. The rates are so low, however, that these low expenses form about 80 per cent. of the receipts.

Probably no great increase of traffic can be expected for this company, except from causes which will affect railroad business generally; and the same may be said of rates; but while the traffic is something which the railroads can do very little to promote, the rates on this road are peculiarly liable to be affected by the action of the railroad companies, on account of the immense preponderance of through freight—nearly four-fifths of the whole, we have seen. If the rates agreed upon last fall for the winter had been maintained, the gross receipts of this company would probably have been nearly doubled on 60 per cent. of its freight traffic (60 per cent. of the whole was through east-bound in 1877); and of course the increase in profits would have been in a very much greater proportion. The prosperity of this road, therefore, is to a very great extent dependent upon harmony among the railroads east and west of it.

We cannot recall any other company except the Great Western of Canada that is likely to have so great an interest in the maintenance of rates.

## THE UNION PACIFIC.

Few roads in the country receive more attention than this line, 1,042 miles long from the Missouri west to Great Salt Lake, through a very thinly-peopled country, without branches, and with few connections. The time and manner of its construction, and its situation in the wilderness, fixed the eye of the world upon it at the time it was built, and it has impressed men's imaginations to such an extent that it is probably generally considered at this day as one of the great roads of the world. And great it certainly is in some respects; it is a long road, even in this country of great railroads, and it certainly serves an important purpose. Moreover, it is a very profitable road, even in these days of railroad bankruptcy. But the public is likely to consider it is a road of great traffic, which is far from being the case. It has, indeed, a quite moderate business, such as, really, it is only rational to expect of a line through a wilderness, even if it has nearly a monopoly of the traffic of that wilderness, and is the only rail outlet of the Pacific Coast. That whole coast has probably but about half as many inhabitants as the State of Iowa, and not many more than the single city of Philadelphia, and the markets of the world are open to it by the sea, by which at this day the greater part of its products are shipped.

In making comparisons of traffic with other roads, the Union Pacific has the advantage that it, unlike most roads in this country, is *all main line*. It has no branches, and its average traffic per mile of road is not reduced by the inclusion of local roads with very thin business. The Pittsburgh, Fort Wayne & Chicago is the only other important road in this country which we can recall that does not have branches with a very much lighter traffic than the main line.

To show the relative position of the Union Pacific as a carrier, and its peculiarly favorable position for making large earnings in proportion to traffic, we subjoin a statement of the amount of freight and passenger traffic, and of gross and net earnings per mile of road on a number of American railroads. To put the figures for traffic into a shape to be easily comprehended and compared, we have found the number of passengers and tons of freight which, carried over the whole length of the road in both directions daily, would make the total passenger and tonnage mileage of the year. That is, in the case of the Union Pacific, 141¼ passengers and 437 tons of freight leaving Omaha for Ogden and from Ogden for Omaha each way daily would make a business equal to the total passenger and freight traffic of the road for the year 1877.

The calculations show the following results:  
Freight and Passenger Traffic and Gross and Net Earnings per Mile of Road.

	Ton miles.	Pass. miles.	Gross earnings.	Net earnings.
Pittsburgh, Fort Wayne & Chicago.....	1,661	315	\$16,782	\$6,553
Illinois Central.....	339	624	6,034	3,215
Eastern (of Massachusetts).....	190	324	8,895	2,835
Atlantic & Great Western.....	973	934	6,325	2,060
Philadelphia & Erie.....	1,597	59	11,017	3,900
Pennsylvania R.R. and branch's 1,941	186		17,904	7,903
Indianapolis, Bloom. & West. 173	474		3,735	890
Union Pacific.....	437	141¼	12,000	6,927

Of the seven roads compared with the Union Pacific four have a larger freight traffic and three a larger passenger traffic than it, but only one, and that the great Pennsylvania Railroad, has larger profits per mile. This is a remarkable fact, worth keeping in mind in considering this road. It is entirely exceptional in its position, and is able to secure and maintain rates so remunerative that with only a moderate traffic, such as is excelled on most of the main lines of the railroads extending from Chicago and St. Louis westward, it is able to secure very satisfactory returns. Its business is not quite three times as great as that of the bankrupt Indianapolis, Bloomington & Western; but its profits are nearly eight times as great. If we reckon a passenger mile as equivalent to two ton miles, the road nearest the Union Pacific in bulk of traffic is the Eastern. It carries about 20 per cent. more and earns net 64 per cent. less; the Atlantic & Great Western carries 65 per cent. more and earns net 74 per cent. less.

The rates on the Union Pacific, at least on freight, are not higher, however, than was common on most Western roads, not very many years ago, and as is common to-day on a great many New England roads. There have not been many instances, however, where a road with so large a traffic, and probably none where a road with so large a through traffic, has been able to maintain rates so well. Almost any road in the country would do well at such rates; the Atlantic & Great Western, for instance, which may be quoted as one of the most profitless, could have made last year \$9,650 net per mile of road, instead of the \$2,060 which it actually did make.

Another effect of the large earnings from a moderate traffic is to exaggerate to the imagination the cheap-



ness with which the road is worked. People have not yet got over the delusion that a low proportion of earnings to receipts is of itself evidence of great economy. Now the Union Pacific last year was worked for 42½ per cent. of its earnings; in 1876 for 40½ per cent. This looks very favorable when compared with 80 per cent. on such roads as the Erie and the Cleveland, Columbus, Cincinnati & Indianapolis. Yet the latter roads are the more cheaply worked.

It is, however, true that the Union Pacific is very cheaply worked, and perhaps as cheaply as any other road in the country that has no larger traffic. Calculating the proportion of expenses the same on passengers and freight (which is more nearly accurate on this than on most other roads) we have the expense per passenger mile only 1.41 cents, and per ton per mile only 0.81 cent. Few Western roads can show so low expenses as these, and it was not to be expected that it could reach such figures as the Pennsylvania's for freight (0.552 per ton mile) with the enormous disproportion in the bulk of business.

Thinly peopled as is the country on the line of this road, it already shows a very considerable amount of local traffic, amounting in 1877 to 23 per cent. of its freight and 53½ per cent. of its passenger traffic. And what is especially favorable to the road, a large part of this local traffic passes over nearly the whole length of the road, for the Salt Lake City business is strictly local, leaving the road five miles from its western terminus. Although there is now a considerable and quite thriving farming population on the eastern 150 miles of the road, it is evident that a very large share of the local passenger traffic passes over the road as far as Cheyenne or Ogden, from the fact that the average journey of way passengers was 234 miles.

Comparing the earnings of the road for a series of years, we find that there was an uninterrupted progress in the totals from 1872 till 1876, and 1877 is the first year which shows a decrease, amounting to 3¼ per cent. There is no considerable decrease, however, in any important branch of earnings except passengers. These fell off suddenly and largely (more than 17 per cent.), and were smaller in 1877 not only than in 1876, but than in any other year since 1872. The freight traffic, however, continued to increase, and the earnings from it were the largest in the history of the road.

Of course the future of this road depends to a considerable extent on the prospects of the completion of a rival line across the continent. Such a line, however, as this report shows, could not compete at all for nearly a quarter of the passenger traffic and for more than half of the freight traffic which the Union Pacific got last year. Nearly 60 per cent. of the total earnings that year were from traffic which could not be competed for by the Northern Pacific or Texas Pacific. And so far as through freight is concerned, most of that, too, would be out of the reach of a competing line, unless that line were controlled by the Central Pacific, on whose lines, and not at the Pacific ports, most of the through freight now originates. Moreover, the rates on through freight would not be likely to be very greatly reduced by competition. With through passenger traffic, which in 1877 was 77 per cent. of the Union Pacific's total passenger traffic and yielded it 21 per cent. of its gross earnings, it is different. Doubtless a very large share of those who make the round trip to and from California would take one railroad in going and the other in returning, and there would be room for a lively competition and a great reduction in rates. The claims of the Kansas Pacific to pro-rate from Cheyenne, if allowed, would also have a tendency to decrease the Union Pacific's share of the through business somewhat, and perhaps to reduce rates. Barring these events, the road is like to have its traffic continue to grow and to keep its rates pretty well maintained. Reductions, in freight rates especially may become necessary without any further competition, but in most such cases the reductions will not necessarily apply to any of the business now existing, but only to additions to the traffic which could not otherwise be secured.

#### A European Engineer's Impressions of American Locomotives.

Of all the many Europeans who visited our Centennial Exhibition, the Austrians have been the first to report on our railroads and railroad appliances. Long ago we noted a little work by Mr. Kupka, which seemed almost exclusively descriptive, and it was not long afterward that we received the report noted below, on locomotive construction, and about the same time a much larger work by the well-known engineer, Ernest Pontzen, which covers the general subject of "railroading," with special reference to superstructure, mechanical appliances, cars, and city traffic. The latter, which has already been neglected some months, must wait still longer, while we now take up the report of locomotives.

This is entitled "Locomotive Construction in the United States of North America, by Alois von Feyrer, Engineer," and

is Part XVI. of the Report of the Austrian Commission on the Philadelphia Exhibition of 1876.

The book, containing 112 pages, with 34 drawings and 8 plates, describes pretty fully what is indicated by the title, and although it does not go much into detail, yet to a European engineer it must be of undoubted value. Seeing the widely different practice of his American brother, he cannot fail to look into the causes that have resulted in this different practice. Perhaps he will find something to learn, and something to improve in his own practice. If the author had at the same time given the peculiarities of European practice, and had drawn a closer parallel between our and their construction, he would have increased the contrast, and enabled the reader to form a more definite criticism. Then the book would be of a far greater value, not only to Europeans, but to us as well. As it is, the book is not without interest, being more or less a criticism of our work, written by an engineer who has had a very different training from ours. It is divided into two parts: the first gives the characteristics of the different parts of American locomotives and the construction of their details; the second describes the locomotives exhibited at Philadelphia and a few others of special interest.

"The territorial difficulties," says the author in the introduction, "together with scarcity and dearth of labor, have caused railroads in America to be built with extremely little care and poorly guarded; hence the main efforts in the construction of locomotives have been expended to make them so as to run with safety over the sharpest curves, and encounter safely and easily all the inequalities of the superstructure."

It is true that locomotives in America are built to suit the roads and not vice versa—a good lesson for those countries where even if labor is cheap, yet the amount of business does not justify costly roads; or perhaps it could be advantageously applied everywhere.

"The trucks of American locomotives and cars, the middle drivers without flanges on the six and eight coupled engines, and the perfection of brakes, are the result of these efforts," says von Feyrer.

Describing the different types of locomotives, the author says: "The prominent feature that strikes the eye is the general typical uniformity in construction and arrangement of details, by which two great advantages are obtained, an easy and cheap construction of single parts, with erection by a well trained working staff, and exact knowledge and quickly acquired familiarity by a runner with every locomotive given to him."

"No single locomotive of the few types seems to be designed for a special service and hence no proper express locomotive was to be seen; the proportion of the stroke to the diameter of the driving wheel, and the tractive power being generally too large."

It is true that this proportion is larger than is the case in Europe, but it is never too large. Our roads with their curves and grades require more tractive power, besides our trains are often heavier. The piston speed being higher and the boilers being more efficient (facts which the author admits) cause our express locomotives to be more powerful than the European and equal to them in the speed. The author's idea that all our passenger locomotives are designed to perform freight service also is a mistake.

Speaking of the general appearance of American locomotives, he finds them pleasing to the eye. The long wheel-base obtained by a truck in front makes them look very stable and of steady motion; the cab, dome, sand-box and bell on top of the boiler, that is, placed high in proportion to the size of wheels, and covered in handsome style with Russia iron, present a handsome picture.

Much space is devoted to the description of boilers. "They are usually of small dimensions, made of light iron, but well braced, and though light are strong; a minimum number of pieces of iron is used in their construction; the riveting is usually done by hydraulic hammers, which makes a good job in a short time; but it is surprising that the holes are always punched and the weakening of iron in this way is not feared; concave caulking is a superior method, as it does not damage the plate iron, as is always the case if a sharp tool is used. The proportion of direct to indirect heating surface is surprising. The total heating surface is small, but the direct surface is very large, which has not yet been obtained in Europe except on the best Belpaire boilers. The fire-boxes, being large, allow more perfect combustion, the flues being on this account much shorter; and it seems that in America the high value of this construction has long ago been discovered." In another place the author says that Americans seem to underrate the value of indirect heating surface. This can not mean that we are making tubes too short, as it would be a contradiction of what we have already quoted. The meaning undoubtedly must be that a larger number of tubes is desirable, but as it would be contrary to experience to place them closer, as is often practiced in Europe, where sometimes tubes of smaller diameter are also used, it follows that the diameter of boiler should be increased, and in such case we would only come nearer to a European boiler and lose part of our advantage. If the last three feet of fire tubes was proved to add 4 per cent. of heat on French boilers, it is a question whether just as large an amount would be obtained on an American boiler with its large fire-box. Undoubtedly no combustion takes place at the farthest end of the tubes, and the is also no question that much of the gases escape unco med up the chimney; how to consume these gases is the question to a boiler constructor, and in America this has been partly accomplished by the large combustion chamber given by a large fire-box. Perhaps an increase of the diameter of fire tubes would have the effect

of changing them so as to make them not only heat conveyors but partly combustion chambers, and then surely they would produce more than the gain of 4 per cent. of heat with the last three feet of fire tubes. In any case, it is desirable to make the boiler larger in diameter and obtain a greater number of tubes by it rather than to make it longer.

In his final conclusions as to our boiler, Mr. von Feyrer says: "It is worthy of a place among the best modern constructions, the whole attention being directed to make it answer its purpose, that is to generate steam in the most perfect and best way." A description of boiler attachments follows. The use of the petticoat pipe is mistaken by Mr. F., as its proper function is perhaps more the regulation of draft through all the rows of tubes than the increase of it, which could be obtained equally well, or perhaps better, by making high exhaust nozzles. An easily opened lock for the smoke-box front instead of screws and nuts, is believed by him to be desirable; and he wonders at the limited use of injectors, and then more as an auxiliary to the pumps.

Next comes a description of running gear. Stability and ease in the running of locomotives seem to be more valued in America than in Europe; that it is often overvalued is shown by statements frequently made that the progress of American railroading is due to the trucks of locomotives and cars. The results obtained in America are so satisfactory that almost never is a locomotive for regular service built without a truck. The many attempts at adding a similar running arrangement to the European four-driving-wheel locomotives show its necessity. The stability obtained by increasing the total wheel-base is not to be underrated. The wheel-base of American locomotives for standard gauge is always above 6 meters [19 ft. 8 in.], and those at the Exhibition were 6.223 to 6.984 meters [20 ft. 5 in. to 22 ft. 11 in.], while at the Vienna Exhibition they had but 3 to 5 meters [9 ft. 10 in. to 16 ft. 5 in.], and only one 5.370 meters [17 ft. 8 in.]. The distance between truck wheels is always greater than the gauge, and that between the drivers is made as large as possible, especially on the six and eight coupled locomotives; on account of large driving wheels. The weight of locomotives is small, and a large percentage of it comes on the truck, generally one-sixth of the whole weight on each truck axle, but this is sometimes reduced to one-seventh or one-eighth.

"But beyond everything else," says the author, "the most striking feature of an American locomotive to a European constructor is the frame. It surprises him that a construction so difficult and expensive, and for which no good reason can be found, should have been generally adopted. Aside from its unfavorable shape and its costliness, it takes up room needed for the fire-box, and is less solid and strong than the European locomotive frame, being formed in two parts and of many pieces welded together."

This is a powerful attack against our frame system, and a wholesale condemnation of it. If the author, failing to find the causes for this design, had asked some of our engineers about it, his views would perhaps be modified. That our frame is strong enough for its purpose experience and the general adoption of it sufficiently prove. It is doubtful if it is more expensive than the European frame would be here. It is true that it requires a large hammer to make it. But is such a hammer wanted in a locomotive shop for frame making only? Are not the riveting, bracing and shaping of a European locomotive frame costly enough to exceed or to equal our frame? Are the facility of placing the details of the engine on our frame and their consequent accessibility in case of repair or inspection of no value? We see but one objection to our frame—that it reduces the width of the fire-box.

As the result of this observation, the author believes that not the frame, but the boiler, carries the cylinders on American locomotives. If he had examined more closely the mode of joining the smoke-box to cylinder saddles, he would have discovered his mistake. The cylinders are good bracing for the frame that rests on the truck. They are only supports for the boiler, whose smoke-box sheet is not even riveted, but is joined to the cylinder by means of bolts. It is true that our frame, being braced to the boiler in several places, and having the sliding arrangement on account of expansion only at the sides of the fire-box (the only place where it is practically needed), presents a more solid unit; and, in this, American construction is superior.

The locomotive axles, continues the author, are made of wrought iron, and only lately has the objection to Bessemer steel been partly overcome. The chief attention seems to be paid to making them simple and cheap, and, therefore, eccentrics are never forged in one piece with the axles.

Speaking of our cast-iron wheels, Mr. von Feyrer does not give any opinion as to the comparative value of wrought and cast wheels.

There is only a short note about brakes; but in describing the exhibited locomotives an account of automatic brakes is given.

Next comes a description of the engines on exhibition, in which the thing most worth our attention is the comparison between proportions of piston area to the total heating surface, as found on locomotives exhibited at Vienna and Philadelphia. This is as follows:

Description.	Vienna.	Philadelphia.
4 wheels coupled.....	7½ to 8½	7½ to 7½
6 wheels coupled.....	7½ to 10½	8½ to 8½
8 wheels coupled.....	8½ to 12½	8½ to 8½

The proportions are smaller on American where they are larger on European locomotives.

Our cylinders are found to be strongly and well made, and the valve faces, on account of separate steam chests, very convenient to work on. The author could not help mentioning our bad practice in making rigid valve-rods, without at-



tention to the up and down motion due to the rocker. He recommends the use of springs as lifting arrangements for the links instead of heavy counterweights, as used in Europe.

With the description of the tender the first part of the book is closed, and the second part of it is nothing more than a very accurate description of the locomotives exhibited, including those of the West End Passenger Railroad. It also includes an account of a superintendent's inspection locomotive, a locomotive of the New York Elevated Railroad, and a street car locomotive, without any further observations of interest to us.

An appendix gives the number, capacity and prices of locomotives, for almost all the locomotive establishments in the United States.

Here the author speaks of the excellent system of our shop work, where everything is done by machinery up to the erection, and mentions again the good result of uniformity in construction, which largely increases the capacity of shops and causes the wonderful training of working-men, who do all their work from a small scale drawing, full size not being wanted even for the most difficult pieces of blacksmith work.

A table of dimensions of 23 locomotives, with drawings of a number of them, closes this report.

#### Railroad Construction in 1877.

We published our record of new railroad construction in the United States in our issue of Jan. 18, showing a total of 2,199 miles completed during the year by 117 companies. It is not possible so early in the year to obtain full and minutely accurate information, and we have been accustomed to continue our inquiries after the January publication of our record and publish a list of additions and corrections at some later date. It is more difficult to obtain trustworthy information than might be supposed, and the errors to be guarded against are overstatements or unfounded statements of new mileage as well as omissions. It is quite common when a few miles of the track of an old road are worked in connection with a new road to report the length of the new road as equal to the whole mileage worked; and several times we have had definite and positive statements of the "completion" of sections of new road on which no track was laid.

The number of corrections for 1877 is unusually large, though the change in the aggregate mileage is not more than was to be expected. The omissions and understatements are largely balanced by the overstatements. A list of these corrections is given below:

**Pittsburgh, Virginia & Charleston.**—This road was credited in our record with an extension of 23 miles in 1877, no part of which was made, though it was announced, and a time-table for the extension published in the *Official Guide*. On examination it appears that the run for the 23 miles from Monongahela City to Brownsville is made not by trains on a railroad but by a boat on the Monongahela River running in connection with the trains.

**The Pittsburgh, Wheeling & Kentucky Railroad** was completed at the close of the year for 20½ miles from Holiday's Cove, instead of 23 miles, as we reported.

**The Cheraw & Chester Railroad**, represented in our record to have been completed for 5 miles in 1877, was actually completed for 10 miles, from Chester, S. C., eastward. Gauge, 3 ft.

**The Spartanburg & Asheville Railroad** was completed for 30 miles northwest of Spartanburg, S. C., instead of 27 miles, as stated in our record. Gauge, 5 ft.

**The St. John's & Indian River road**, not noted in our record, was completed from the upper St. John River at Salt Lake, Fla., eastward 8 miles to Titusville on Indian River, near the Atlantic coast.

No track was laid on the **Sabine Pass & Northwestern Railway**, though 57 miles were made ready for the rails. We reported 12 miles of it completed. Gauge, 3 ft.

**The Tyler Tap Railroad** is 21½ miles long, instead of 20, as reported in our record.

What we called the **Waynesville, Port William & Jeffersonville Railroad** in our record, whose present name (changed Nov. 29) is **Columbus, Washington & Cincinnati**, was completed in 1877 for 18 miles southeastward from its junction with the Dayton & Southeastern at Allentown to Glenwood, O., which is 7 miles more than was reported in our record. Gauge, 3 ft.

**The Springfield, Jackson & Pomeroy Railroad** had 30 miles completed of its southern division, from Springfield, O., southeast to a junction with the Dayton & Southeastern five miles east of Washington, instead of 13 miles, as reported. Its trains run to Washington over the Southeastern. Gauge, 3 ft.

**The Paulding & Cecil Railroad** is not 7 but only 5 miles long, from Paulding, O., to the Wabash Canal. The two miles from the Canal to the Wabash Railroad at Cecil are ready for the iron, but the rails are not yet laid.

**The Lake Erie & Louisville Railroad** was extended from its terminus at the end of 1876, at St. Mary's, O., southward 11 miles to Munster.

**Grayville & Mattoon.**—This extension, made in 1877, was 32½ instead of 30 miles long, and the part of it north of Newton was but 27 miles long, the rest being south of Olney, the line extending not from Olney to Prairie City, but from Parkersburg, Ill., 10 miles south of Olney, north by west 57½ miles to a point two miles north of Prairie City and within 16 miles of the proposed northern terminus at Mattoon.

**Havana, Rantoul & Eastern.**—An extension of this road was made from Alvin, Ill., eastward 12 miles to a junction with the Wabash Railway at West Lebanon, Ind. Gauge, 3 ft. About four miles are in Illinois.

**The Galena & Southern Wisconsin 3 ft. gauge road**, was extended in 1877 from its former northern terminus at Platteville, Wis., northward 8 miles to McCormack's, making the whole line 40 miles long, from Galena, Ill., northward.

**Little River Valley & Arkansas.**—This company on the 31st of December, 1877, had completed 20 miles of 3 ft. gauge railroad, from New Madrid, Mo., westward, and had seven miles more graded, to Malden. It was not reported at all in our record.

**The Denver & Rio Grande**, in addition to its extension of 29 miles from La Veta to Garland, now called the main line, extended the southern section of its road 7½ miles from El Moro to the El Moro coal mines, making that section 44½ miles long from the junction at Cucharas.

**The Colorado Central's Georgetown Branch** completed in 1877 is not 21 but only 18½ miles long, from Floyd Hill to Georgetown.

**The Main Line** completed during the year from Longmont to the Union Pacific at Hazard is 72 miles long, instead of 70. It was completed Nov. 4.

A standard-gauge line begun in November to shorten the line from Golden north, which will be 7½ miles when done, had 1½ miles of track laid on it. This gives 3¼ miles more of standard gauge and 2¼ less narrow gauge than reported in our record.

**The Northern Railway**, of California, reported in our record to be 28 miles long from San Francisco Bay at Oakland, actually begins at Shell Mound, eight miles east of the bay, on the **Berkely Branch** of the **Central Pacific**, and is 27½ miles long thence to Martinez.

The changes made in our record by these corrections are as follows:

	More.	Less.
Pittsburgh, Wheeling & Kentucky	23½	23½
Pittsburgh, Virginia & Charleston	5	23
Cheraw & Chester (3 ft.)	5	5
Spartanburg & Asheville	3	3
St. John & Indian River	8	8
Sabine Pass & Northwestern (3 ft.)	12	12
Tyler Tap	1½	1½
Waynesville, Port William & Jefferson (now Columbus, Washington & Cincinnati) (3 ft.)	7	7
Springfield, Jackson & Pomeroy (3 ft.)	17	17
Paulding & Cecil	2	2
Lake Erie & Louisville	11	11
Grayville & Mattoon	24½	24½
Havana, Rantoul & Eastern (3 ft.)	12	12
Galena & Southern Wisconsin (3 ft.)	8	8
Little River Valley & Arkansas (3 ft.)	20	20
Denver & Rio Grande (3 ft.)	7½	7½
Colorado Central—		
Main line	2	2
Golden Cut-off	1½	1½
Georgetown Branch (3 ft.)	23½	23½
Northern of California	0½	0½
Total	106	42½

Difference to add to total in January record... 63½

This makes a total of 2,262 miles of new railroad completed in the United States in 1877 by 120 companies, giving an average of 18.85 miles per company. Two companies reported in our January record to have completed railroad in 1877 did not lay any new track; five not there reported have laid some new track; four lines constructed in 1877 that record made too long, and nine it made too short.

This gives as the total mileage of the United States, taking as a basis Poor's Manual for the end of 1876, 79,725 miles of railroad completed in the United States at the close of 1877.

The whole of the increase save 1½ miles is of 3 ft. gauge roads, the omissions of standard gauge lines in the January statement being about balanced by the overstatements. This makes the total of narrow-gauge roads for the year 767 miles, which is more than one-third (33.9 per cent.) of the total. There are besides a few miles of road whose gauge we have not been able to ascertain; and it may be said that generally narrow-gauge roads are more likely to escape attention than standard lines, as they are to a much greater extent short, isolated and situated in remote districts. The average length of the narrow-gauge roads built within the year was 16.67 miles; that of the other roads, 20.76 miles.

The mileage completed in each State in 1877 was as follows:

New Hampshire	18	Ohio	269
Vermont	71	Michigan	56
Massachusetts	174	Indiana	24
Rhode Island	98	Illinois	304½
Connecticut	312	Wisconsin	62
New York	1514	Minnesota	210
New Jersey	811	Iowa	1504½
Pennsylvania	1194	Missouri	36
Virginia	169	Kansas	804½
North Carolina	27	Nebraska	69
South Carolina	489	Wyoming	1234½
Florida	13	Colorado	20
Alabama	114	Utah	2384½
Louisiana	2	California	524½
Texas	1684	Washington	224½
Tennessee	213		
Kentucky	284	Total	2,262
West Virginia	204		

The changes from the January record are as follows, by States:

	January	Cor-	January	Cor-
	rected.	rected.	rected.	rected.
Pennsylvania	1194	18	Indiana	24
South Carolina	408	489	Illinois	33
Florida	5	13	Wisconsin	54
Texas	179	1684	Missouri	16
West Virginia	23	204	Colorado	115
Ohio	236	269	California	239

More than half of the additional mileage is in Ohio, which thus is placed at the head of the list instead of California.

We have given in this list some sections of road on which a few miles of track may have been laid in 1878, our efforts to obtain definite information as to the time of their construction having been fruitless.

#### Chicago Live Stock Traffic.

The receipts and shipments of live stock at Chicago, which is the greatest American market for these staples—and doubtless the greatest market in the world as well—showed a decrease in business for 1877 as compared with 1876. The re-

ceipts of cattle at Chicago, show an uninterrupted increase from 1868 to 1876, and though the receipts in 1877 were 8 per cent. less than in 1876, they were still 12 per cent. more than in any previous year. The hog receipts reached their maximum in 1873, those of 1877 being 9 per cent. less; but the present year gives promise of exceeding 1873, even.

Most of the cattle received at Chicago are reshipped to the East, the number packed not being a large part of the whole, though of course there is a considerable consumption in a city of something like half a million inhabitants. But the greater number of the hogs are packed in Chicago, and the proportion tends to increase. In 1871, a little more than 50 per cent. of the hogs received were shipped; in 1877, only 23½ per cent. The number left for Chicago consumption and packing was 1,218,000 in 1871, and 3,075,000 in 1877. During the twelve years that the Union stock yards have been open, the number of hogs received has been 84,000,000, which, standing in single file, snout to tail, would make a row just about long enough to reach around the globe. The receipts of cattle and hogs by the different routes for the years 1876 and 1877 have been:

	Number—	P. c. of total.	1877.	1876.
Cattle:	1877.	1876.	1877.	1876.
Chicago, Milwaukee & St. Paul	40,878	27,418	4.0	2.5
Chicago & Northwestern	156,756	136,164	15.2	12.4
Chicago & Pacific	2,916	3,907	0.3	0.3
Chicago, Burlington & Quincy	337,110	372,535	32.6	34.0
Chicago, Rock Island & Pacific	179,940	185,285	17.4	16.9
Chicago & Alton	154,951	189,997	15.0	16.7
Illinois Central	136,023	152,073	13.2	13.9
Chicago & Illinois Eastern	11,199	18,462	1.1	1.7
Eastern roads	8,494	12,474	0.8	1.1
Driven in	4,984	5,530	0.4	0.5
Total	1,033,151	1,096,745	100.0	100.0

Five roads to the west and southwest thus are seen to have brought in 93.4 per cent. of the cattle in 1877 and 93.9 in 1876, and the three roads which extend to Kansas City carried 65 per cent. last year and 67.6 the year before, though they did not get most of them at Kansas City, by any means. The Chicago, Burlington & Quincy leads, as usual, with nearly one-third of the whole and nearly twice as many as any other road.

The hog receipts were brought as follows:

	Number—	P. c. of total.	1877.	1876.
Hogs:	1877.	1876.	1877.	1876.
Chicago, Milwaukee & St. Paul	84,755	60,413	2.1	1.4
Chicago & Northwestern	713,306	688,382	17.7	16.4
Chicago & Pacific	123,199	23,865	0.6	0.6
Chicago, Burlington & Quincy	1,216,058	1,250,984	30.2	30.1
Chicago, Rock Island & Pacific	623,005	701,771	15.5	16.8
Chicago & Alton	281,772	312,140	7.0	7.5
Illinois Central	737,699	763,052	18.3	18.2
Chicago & Eastern Illinois	88,724	93,937	2.2	2.2
Eastern roads	256,429	285,823	6.4	6.8
Driven in	423	729	...	...
Total	4,025,970	4,190,008	100.0	100.0

The course of hog receipts is similar to that of cattle, but the source of supply is not confined to the country on the southwest to the same extent. The five roads which brought 93 per cent. of the cattle brought 58.7 per cent. of the hogs; the three Kansas City roads which brought 65 per cent. of cattle brought 52.7 per cent. of the hogs. The Chicago & Northwestern gets a larger proportion of hogs than of cattle, the Chicago & Alton a much smaller one. The Illinois Central ranks second as a hog carrier, though it is fifth as a cattle carrier.

When we come to shipments, the positions of the roads are reversed. The Western roads named above carry none to speak of, and the shipments are substantially confined to three of the five lines to the East, the Baltimore & Ohio not getting one per cent. and the Pittsburgh, Cincinnati & St. Louis not one-tenth of one per cent. of the total. The shipments by the three chief lines and the total by all other lines were:

	Number—	P. c. of total.	1877.	1876.
Michigan Central	206,398	201,277	29.8	25.2
Lake Shore & Michigan Southern	198,350	254,074	28.2	31.9
Pittsburgh, Fort Wayne & Chicago	217,320	244,705	30.9	30.7
All other roads	78,324	97,688	11.1	12.2
Total	703,402	797,724	100.0	100.0

The distribution among the three lines named was effected, so far as shipments to New York are concerned, by an agreement known as the "evening" contract, which gives each road a definite proportion of the whole traffic.

The shipments of hogs are much more limited than the receipts, a considerable part of the latter coming some distance westward to Chicago to be packed, that being the great market for live hogs. Thus we have seen that 6.4 per cent. of the hogs were brought to Chicago by Eastern roads, though not 1 per cent. of the cattle were so brought in.

The shipments of hogs by the chief routes were:

	Number—	P. c. of total.	1877.	1876.
Michigan Central	423,229	445,122	44.5	39.3
Lake Shore & Michigan Southern	375,640	450,116	39.5	39.8
Pittsburgh, Fort Wayne & Chicago	145,577	214,893	15.3	19.0
All other roads	6,775	21,504	0.7	1.9
Total	951,221	1,131,635	100.0	100.0

The chief feature here is a considerable gain by the Michigan Central, and a considerable loss by the Fort Wayne road. The preponderance by the two Northern roads is probably due to the fact that hogs are carried to the East not like cattle chiefly to be slaughtered and eaten fresh, but largely to be packed, and that a chief packing city is Boston, to which the Fort Wayne road cannot carry such a freight as hogs so conveniently as can the other two.

The considerable falling off in hog shipments (16 per cent.) is probably also due largely to a diversion of the packing business from the East to the West, and especially to Chicago itself. Boston has been noted for summer packing, which until late years was little practiced in the Northwest. Now, however, Chicago has become the great centre of summer as of winter packing. In 1877 it packed just about as many in



the eight months between February and November as in the four other months which are known technically as the packing season.

As an indication of the importance of this traffic to the railroads we may say that the total receipts of live-stock, even assuming that all the hogs were carried in double-deck cars, as most of them certainly were not, amounted in 1877 to about 118,000 full car-loads, and the total shipments to 58,000 car-loads, which is equivalent to 380 car-loads received and 186 shipped every working day in the year.

The entire business of the city has been for thirteen years concentrated at the Union Stock Yards, from whose annual report the above figures are obtained. The records of these yards show an enormous growth in the business, though there was a decrease from 1876 to 1877. But from 1866, when the yards were opened, to 1877, if we divide the 12 years into three periods of four years each, we find the receipts of 1869 greater than those of 1866 by 2½ per cent. in cattle and 73 per cent. in hogs; those of 1873 greater than those of 1869 by 89 per cent. in cattle and 167 per cent. in hogs, and those of 1877 larger than those of 1873 by 96 per cent. in cattle and smaller by 9½ per cent. in hogs. The progress of the business has thus been arrested in hogs since the year 1873 (it will probably fully recover this year, judging from the movement of January and February), but has been rapid in cattle since that year, though not so rapid as before. An indefinite increase is not to be looked for: Chicago already has by far the largest traffic in both cattle and hogs that has ever been known, and if it were to continue to grow as fast as during the four years ending with 1873, it would require twenty-five million hogs to supply that market by 1885, while by the end of the century the number would be more than a billion. A change in the rate of growth is inevitable wherever such tremendous progress has been made. To suppose that it will continue is to assume that the capacity for production in the West and for consumption in the rest of the world is absolutely infinite. This, however, does not exclude a very large growth in the traffic.

#### Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads, as follows:

**Lehigh Valley.**—The *Lost Creek Branch* is completed from the *Lost Creek* breaker, near Shenandoah, Pa., west by south to Girardville, 5 miles.

**Denison & Southeastern.**—Extended from Belleplaine, Tex., southeast to Whitewright, 10 miles.

This is a total of 15 miles, making 150 miles of new railroad completed in the United States in 1878, against 127 miles reported for the corresponding period in 1877.

THE PROPOSED APPORTIONMENT OF EAST-BOUND TRAFFIC remains a project, with no more probability of being realized than a week ago. There was a conference in Chicago Tuesday last, and an effort was made to have some settlement made as to business out of Milwaukee, but the parties who control that traffic are not willing to consent to a division of it by arbitration, though they may come to terms themselves about it. Meanwhile, it is generally understood that the roads may take freight on the basis of 20 cents per 100 for grain and fourth class from Chicago to New York, because of the large number of contracts which some of the lines have out standing.

It must be remembered that not only is the Northwestern business a very complicated one, by reason of the number of competing points and the number of competing lines, but that, moreover, the lines are by no means equally interested in the maintenance of east-bound rates. Indeed, some of the lines have very little business on which through rates to the East are pro-rated. These roads profit by every reduction of the rates from Chicago to the East, just as they do by low lake rates. The rates cannot be too low for them. They make their own rates on nearly all their traffic, which is promoted by the cheapness with which it is carried after it leaves their road. All the Chicago roads would be in this category but for the number of points, mostly southward from Chicago, from which they have been compelled to pro-rate of late years. But in some cases the amount that can be lost by the unprofitableness of the rate on the small amount of through freight is insignificant in proportion to the total east-bound traffic and earnings. The interest of the Western roads in maintaining through rates depends chiefly upon the proportion of their traffic to which the through rates, based on the Chicago-New York rates, apply. If this proportion is very small, the through rate cannot be too low for their interests. If it could be reduced to nothing it would be nearly equivalent to bringing the Atlantic to their eastern termini.

LAKE NAVIGATION is already open, five weeks earlier than last year, and, earlier than ever before, a steam barge having passed through the Straits of Mackinaw bound west, March 15. It can hardly be said that through navigation has begun yet, however; and probably until April the rate of insurance will prevent any considerable movement of grain vessels, especially as, while lake rates are so low, the vessels cannot get adequate payment, and the canal will not be open to receive their cargoes at Buffalo until about April 10. The lake and canal vessels will have to meet, apparently, a rail competition very like that of 1876, but the canal boats will have the advantage of the reduction of tolls amounting to about one cent a bushel. With that advantage, however, they did a losing business last year until the old contracts by rail at low rates expired last July. There are probably none so anxious to see east-bound rates restored and maintained as the owners of lake vessels and canal boats. Without it they have hardly any chance

of making any profit out of the season's business, however large it may be, and for the vessels it will not only be more profitable, but much larger if the railroads maintain last summer's rates of 30 cents per hundred on grain. It now seems more probable that the rate will be 20 than that it will be 30 cents. At 20 cents the lake vessels, the Buffalo elevators and the canal boats will all have to live on something less than 11½ cents per bushel on corn from Chicago to New York. If they could get as much as that and have plenty to do, probably they would be satisfied; but ordinarily they have to bid materially below the rail rate in order to get the business. As it is, the railroads are carrying away the grain about as fast as it comes forward, and there seems likely to be no considerable accumulations for the vessels to take when they are ready to sail.

THE IOWA RAILROAD LAW has been substantially repealed, or at least a substitute for it has been adopted which renounces the principle of establishing by law the exact rates to be charged for carrying freights by each line. A limitation of passenger fares is continued, but the chief restrictions on freight rates are those evidently intended to insure equal terms to all shippers under similar circumstances—that is, to prevent unjust discrimination; and this is something which the community has a right to require, and to be at some pains to insure. We have not seen a copy of the law, but from an abstract of it which we have copied elsewhere it seems probable that the language assumes certain things to be unjust discriminations which are not so, but are often indispensable in order to make a railroad most serviceable to the community as well as to its owners. But there are some qualifications to the requirements which may make it possible to construct or develop a rational tariff, under the law. It provides for a board of commissioners who are to collect statistics, hear and investigate complaints and make reports and recommendations, and with these and the power of the Legislature, which has been affirmed by the United States Supreme Court, the railroad companies are likely to take great pains to avoid any reasonable ground of complaint in making their tariffs and the general conduct of their business.

THE WINTER GRAIN MOVEMENT for five years shows the receipts at the eight leading Northwestern markets to have been, from Dec. 1 to March 9, in bushels:

1877-78.	1876-77.	1875-76.	1874-75.	1873-74.
36,113,390	29,638,085	34,015,856	22,334,050	36,526,509

The receipts this year have thus nearly caught up with those of 1873-74, which were extraordinarily heavy early in the winter, but lighter later.

The shipments of the same markets were:

1877-78.	1876-77.	1875-76.	1874-75.	1873-74.
23,912,815	14,445,127	17,050,540	10,275,265	16,326,486

The increase this winter over last, amounts to 66 per cent.

The receipts at the seven Atlantic ports were:

1877-78.	1876-77.	1875-76.	1874-75.	1873-74.
46,645,505	27,296,376	24,982,867	11,250,538	20,600,418

Here is an increase of 71 per cent. over the receipts of last winter, which latter had never been exceeded then, not even by those of 1873-74.

OCEAN FREIGHTS seem to have been unfavorably rather than favorably affected by the low rail rates from the West to the seaboard. For the winter these rates were rather unusually steady, varying from 7½d. to 9d. per bushel for grain by steam from New York to Liverpool, and 35s. to 40s. per ton for bacon and lard. This week 6½d. is reported for grain and 25s. to 27s. 6d. for provisions. At current rates bacon packed in Chicago is delivered in Liverpool with a charge of only about half a cent a pound for carriage. And yet the low rates do not make satisfactory prices for bacon or hogs in the Northwest. The chief beneficiaries seem to be the European consumers, whom we are supplying with bread and meat at rates which must materially alleviate the effects of dull times and reduced wages.

#### Southern Railway & Steamship Association.

A called meeting of this association assembled at the Kimball House, Atlanta, March 14, for the purpose of establishing a regular rate to be charged for special classes of freight transported over railroads and steamships governed by the rules of this association.

Upon the call of the roll, the following members of the association were found to be present: W. M. Wadley, President; Wm. Rogers, Superintendent; G. W. Sorrell and C. J. Brown, directors Central Railroad of Georgia.

W. G. Raoul, Superintendent, Southwestern Railroad. Joseph E. Brown, President; Wm. McKee, Superintendent; R. A. Anderson, General Freight Agent, and W. C. Morrell, Treasurer, Western & Atlantic Railroad.

J. P. King, President, and S. K. Johnson, Superintendent, Georgia Railroad and Macon & Augusta Railroad.

E. P. Alexander, General Manager, and S. B. Hubbard, General Freight Agent, Western Railroad of Alabama.

R. R. Bridges, General Manager, and A. Pope, General Freight Agent, Wilmington & Weldon, Wilmington, Columbia & Augusta and Charlotte, Columbia & Augusta railroads.

D. C. Wilson, Receiver, and R. G. Fleming, General Superintendent, Port Royal Railroad.

J. M. Edwards, Superintendent, Northeastern Railroad of Georgia.

H. R. Mallory, of the Mallory steamship line.

M. Stanton, General Superintendent, Selma, Rome & Dalton Railroad.

E. C. Richardson, Boston & Savannah steamship line.

H. S. Haines, General Superintendent, and C. D. Owens, General Agent, Atlantic & Gulf Railroad.

G. W. Adams, General Superintendent, Macon & Brunswick Railroad.

R. Dunn, General Superintendent, Montgomery & Euflala Railroad.

G. J. Foreacre, General Manager, and H. M. Cottingham, General Freight Agent, Atlanta & Charlotte Air Line.

E. W. Cole, President; E. F. Wilson, Director, and Geo. R. Knox, General Freight Agent, Nashville, Chattanooga & St. Louis Railroad.

C. M. McGhee, Vice-President; J. R. Ogden, General Freight Agent, East Tennessee, Virginia & Georgia Rail-

J. M. Selkirk, Charleston line.

James Hoge, Macon agent Macon & Augusta Railroad.

W. M. Wadley also represented the Savannah, Griffin & North Alabama Railroad, the Ocean Steamship Company, and the Philadelphia & Savannah Steamship Company.

Judge J. P. King also represented the Atlanta & West Point Railroad.

The President, Hon. Joseph E. Brown, presided, and Mr. C. A. Sindall acted as Secretary.

On application, Mr. G. J. Foreacre, General Manager of the Atlanta & Charlotte Air Line, was admitted to the association as a member.

On motion, the President of the meeting appointed a committee of fifteen to prepare business for the association, and the meeting then adjourned till the next morning.

The proceedings of the second day were private, but it is stated that the committee early in the day presented a report, which was rejected; a second report met with the same fate, but a third was adopted unanimously, after some discussion. The report adopted, it is said, requires the re-establishment of the old rates to and from all competing points, without rebate, as they were before the recent cutting of rates began. To meet the case of some of the lines, which have made time contracts at the cut rates, it is required that the companies having such contracts pay the association the difference existing in the rate made in the contract and that of the regular pooling rate charged for the class of goods specified in the contract. It also recommends the removal of all the soliciting agents heretofore employed, the committee considering that the trouble and the reduction of rates is largely due to these agents.

After the adoption of the report the meeting adjourned.

General Passenger & Ticket Agents' Association.

The report of the first day's proceedings given last week included most of the proceedings of public interest, and but brief reports have reached us of the subsequent meetings.

The Saturday and Monday sessions were devoted chiefly to the usual routine work required at the semi-annual conventions and to the consideration of the rate sheet in the convention or in committee. On Monday afternoon the consideration of round-trip tickets was taken up again, and after a short debate a resolution was passed authorizing the use of the drawback ticket as recommended by the committee, or of what is known as the "iron-clad" ticket. A resolution was also passed relating to charges and collections for extra baggage. Chicago was selected as the place for the next semi-annual meeting, and a motion to reconsider was voted down.

On Wednesday, March 13, the routine business was concluded, and a rate sheet adopted which does not materially differ from that of last year, and the convention then adjourned.

After the adjournment a number of the members went on an excursion up the St. Johns River to Tocoi and over the St. Johns Railroad to St. Augustine. Another excursion was also made over the Atlantic, Gulf & West India Transit road to Fernandina. Both were much enjoyed, and at their conclusion the usual complimentary resolutions were passed.

The Western members generally returned home by way of Macon and Atlanta, and those from Eastern roads by Savannah and Charleston. For many members of the association this was a first visit to Florida, and seems to have been much enjoyed, the trips to Jacksonville and back partaking of the nature of a pleasure excursion almost as much as the entertainments offered to the association while in Jacksonville.

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Assistant General Freight Agent, with office at Pittsburgh, Pa., and will have charge of the freight business of the Pittsburgh Division. Mr. Chipley was formerly Freight Agent of the Central Ohio Division, but was, only three months ago, appointed General Freight Agent of the Scioto Valley road.

**Bismarck & Black Hills.**—The officers chosen for this company are: President, J. A. McLean; General Manager, Col. Sweet. Office at Bismarck, Dakota.

**Boston & Mystic Valley.**—This company has been fully organized by the election of the following directors: J. G. Thompson, Lowell, Mass.; S. W. Twombly, Winchester, Mass.; Henry Blanchard, Wilmington, Mass.; Stephen Dow, Granville Parks, Woburn, Mass. The board elected Stephen Dow, President; G. H. Sargeant, Clerk; Granville Parks, Treasurer.

**Central, of Iowa.**—A dispatch from Marshalltown, Ia., says: "Col. Milo Smith, the projector, and during its early life the Manager of the Chicago, Iowa & Nebraska Railroad, now a part of the Chicago & Northwestern, has been appointed Receiver of the Central road of Iowa, vice J. B. Grinnell."

**Cleveland, Tuscarawas Valley & Wheeling.**—At the annual meeting in Cleveland, O., March 13, the following directors were chosen: Selah Chamberlain, H. Cooke, Amasa Stone, W. S. Streater, E. B. Thomas, Cleveland; C. Russell, Massillon, O.; W. W. Halloway, E. P. Rhodes, Bridgeport, O.; H. A. Kent, New York.

**Columbus & Washington.**—The officers of this new company are: President, J. F. Ely, Washington Court House, O.; Vice-President, P. C. Sessions, Columbus, O.; Secretary, J. M. Edwards, Bloomingburg, O.; Treasurer, James Purcell.

**Dayton & Corvinton.**—At a meeting held in West Milton, O., March 12, the following directors were chosen for this new company: Dr. J. Williamson, Versailles, O.; S. Martin, John B. Litchford, Covington, O.; J. C. Coppack, Pleasant Hill, O.; D. M. Coats, West Milton, O.; J. Waybright, Randolph, O.; D. L. Riker, G. W. Kneisley, S. B. Smith, Dayton, O.

**Havana, Rantoul & Eastern.**—Mr. Aug. W. Wright is Chief Engineer and General Superintendent of this road, with office at Rantoul, Ill. Mr. Wright has served as Chief Engineer of the St. Louis & Toledo Air Line, the Federal Creek Valley and the Arkansas Central roads, and in 1870-71 had charge of the South Branch of the Louisiana & Missouri River road. Mr. Wright has served on other lines, and recently declined the position of Division Engineer on the Chicago & Alton.

**Lake Erie & Louisville.**—At the annual meeting in Fremont, O., March 13, the following directors were chosen: James B. Hodgskin, A. Hegewisch, C. M. Taylor, W. H. Andrews, C. O. Tillotson, C. S. Price, H. R. Baltzer, Adrian Iselin, Jr., Charles Foster, E. Livingston, I. H. Burgoon, A. B. Williams. The board re-elected James B. Hodgskin, President; Charles Foster, Vice-President; I. H. Burgoon, General Superintendent; W. H. Andrews, Secretary and Treasurer.

**Mercer Mining & Manufacturing Co.**—At the annual meeting, held March 4, Mr. R. B. Roosevelt was elected President; A. D. Gillespie, H. B. Wick, J. M. Bredin, S. Burke, D. Derickson, directors; J. T. Blair, Superintendent; F. H. Oliphant, General Manager; C. A. Derickson, Treasurer; T. H. Linnell, Secretary.

**New Hampshire Railroad Commissioner.**—At the recent election in New Hampshire Mr. David E. Willard, of Oxford, was chosen Railroad Commissioner.

**Pittsburgh, Cincinnati & St. Louis.**—At the annual meeting in Columbus, O., March 19, the following directors were chosen: D. S. Gray, Columbus, O.; Robert Sherrard, Jr., Steubenville, O.; Alfred Gaither, Cincinnati; W. H. Barnes, Thomas D. Messler, J. N. McCullough, Wm. Thaw, Pittsburgh; Thomas A. Scott, George B. Roberts, Strickland Knoss, J. N. DuBarry, Wistar Morris, H. H. Houston, Philadelphia. The new directors are Messrs. Barnes and Messler, who replace Josiah Bacon and G. W. Adams.

**Port Dover & Lake Huron.**—At the annual meeting in Tavistock, Ont., recently, the following directors were chosen: Gilbert Moore, S. S. Fuller, John Jackson, Henry Parker, Dr. Cook, D. Tisdale, T. J. Clark. The board elected D. Tisdale, President; Henry Parker Vice-President; R. W. Sawtell, Secretary-Treasurer; A. D. Wright, General Manager; C. N. Scott, Superintendent.

**Quincy, Missouri & Pacific.**—The new board has re-elected Henry Root, President; Amos Green, Vice-President and General Manager; C. H. Bull, Secretary and Treasurer.

**Scioto Valley.**—Mr. J. J. Archer has been appointed General Freight Agent, in place of C. A. Chipley, who has gone to the Baltimore & Ohio. Mr. Archer has been on the Cincinnati, Sandusky & Cleveland for some time.

**Union Pacific.**—The five Government directors for the ensuing year have not yet been announced, but it is reported that the names chosen are: G. B. Smythe, of Iowa; Reuben H. Wilbur, of Nebraska; Ralph P. Buckland, of Ohio; C. W. Chadwick, of Connecticut; Charles Francis Adams, Jr., of Massachusetts. Mr. Chadwick is the only one reappointed, the retiring directors being J. H. Millard, of Nebraska; James F. Wilson, of Iowa; John C. S. Harrison, of Indiana; and F. B. Brewer, of New York. Mr. Smythe is said to be a gentleman of much railroad experience. Mr. Adams is widely known as the leading member of the Massachusetts Railroad Commission and a careful and intelligent student of and writer on railroads, especially in their relation to the State. He is certainly able to do excellent service in his new position.

**United States Rolling Stock Co.**—At the regular monthly meeting of the trustees in New York, March 18, Mr. A. Hegewisch was appointed General Manager, and Mr. D. M. Monjo was appointed Treasurer, in place of Mr. Hegewisch. That gentleman retains the office of Secretary.

**Woodruff Sleeping Car Co.**—At the annual meeting in Pittsburgh, March 19, the following directors were chosen: Frank Rahm, James Irwin, W. G. Johnston, G. W. Hailman, John McClintock, E. Poulson, C. W. Doubleday. The board elected Frank Rahm President; James Irwin, Vice-President; Augustus Trump, Secretary and Treasurer.

## PERSONAL.

—Mr. James R. Hogg, of Elkton, Md., has recently been retired on a pension by the Philadelphia, Wilmington & Baltimore Company. He began work in 1831 as assistant to John Randall, the engineer who located the New Castle & Frenchtown road.

—Mr. William Gooding, who died at Lockport, Ill., March 4, aged 75 years, had served as assistant and as Chief Engineer on the construction of the Ohio State canals, the Wabash & Erie Canal and the Illinois & Michigan Canal. After the completion of the latter he was appointed Secretary to the board of canal trustees, which office he held till 1871. He also acted in connection with the United States engineers on the enlargement of the canal and the improvement

of the Illinois River, and was the first President of the Joliet & Chicago Railroad Company.

—Henry S. Welles, of New York, a contractor largely interested in the Brunswick & Albany road and the Portage Lake & Lake Superior Ship Canal, has been adjudged a bankrupt on his own petition. His liabilities are \$225,000; his assets are chiefly in railroad and canal securities.

—Mr. Frederick V. Beisel died at his residence in Philadelphia March 18, in the 61st year of his age. He was one of the oldest practical telegraphers in the country, learning the business in Harrisburg in 1847. Subsequently he went to Pittsburgh and held a position in the management of the Atlantic & Ohio Telegraph Company, the first line built between Pittsburgh and Philadelphia. In 1850 he was placed in charge of the Philadelphia office, and remained in the employ of the company till its consolidation with the American Company, after which he engaged in the mercantile business. He was one of the first directors of the Pacific & Atlantic Telegraph Company, and was for the last fifteen years President of the Delaware River Telegraph Company. At the time of his death he was connected with the firm of Graf, Rothermel & Co.

—Mr. Wm. E. Chamberlain, recently appointed Superintendent of the Providence & Worcester Railroad, has been for some years past Master Car Builder in charge of the Allston shops of the Boston & Albany road.

## TRAFFIC AND EARNINGS.

### Railroad Earnings.

Earnings for various periods are reported as follows:

Year ending Dec. 31:

	1877.	1878.	Inc. or Dec.	P. c.
Cleveland, Tuscarawas & Wheeling.....	\$401,468	\$404,218	L.	\$87,250 21.6
Expenses.....	309,934	277,968	L.	31,966 11.5
Net earnings.....	\$181,534	\$126,250	L.	\$55,284 43.8
Earnings per mile.....	4,859	3,997	D.	862 21.6
P. c. of expenses.....	63.06	68.77	D.	5.71 8.3
Dubuque Southwest.....	105,315	112,496	D.	7,151 6.4
Expenses.....	97,215	100,461	D.	3,246 3.2
Net earnings.....	\$8,100	\$12,005	D.	\$3,905 32.5
Earnings per mile.....	1,915	2,045	D.	130 6.4
P. c. of expenses.....	92.32	89.30	L.	3.02 3.4
Pitts., Cin. & St. L.....	3,097,962	3,264,521	D.	166,559 5.1
Expenses.....	2,022,913	2,427,695	D.	404,782 16.7
Net earnings.....	\$1,075,049	\$836,826	L.	\$238,223 28.5
Earnings per mile.....	15,443	16,274	D.	831 5.1
P. c. of expenses.....	65.30	74.37	D.	9.07 12.2

Two months ending Feb. 28:

	1877.	1878.	Inc. or Dec.	P. c.
Bur., Ced. R. & Nor.....	\$312,608	\$142,058	L.	\$170,550 130.0
Net earnings.....	121,153	28,503	L.	\$92,650 335.1
P. c. of expenses.....	61.25	79.91	D.	18.66 23.4
Cairo & St. Louis.....	24,015	40,277	D.	16,262 40.4
Expenses.....	55,968	52,145	L.	3,823 7.3
Clev., Mt. V. & Del.....	213,478	185,344	L.	28,134 15.2
Int. & Gt. Northern.....	244,823	310,068	D.	65,245 21.0
Minne. & St. Louis.....	70,875	.....	.....	.....
New Jersey Midland.....	96,601	92,835	L.	3,766 4.1
Paducah & Memphis.....	34,161	30,618	L.	3,543 11.6
St. L. & Southeast.....	169,097	172,729	D.	3,632 2.1

Month of January:

	1877.	1878.	Inc. or Dec.	P. c.
Gal., Harrisburg & San Antonio.....	\$94,053	\$83,717	L.	\$10,336 12.5
Mobile & Ohio.....	271,992	232,382	L.	39,610 17.0
Wilmington, Grey & Bruce.....	28,525	22,543	L.	5,982 26.6

Month of February:

	1877.	1878.	Inc. or Dec.	P. c.
Cairo & St. Louis.....	\$13,048	\$22,075	D.	\$9,027 40.8
Clev., Mt. Vernon & Delaware.....	26,812	25,246	L.	1,566 6.2
Houston & Tex. Cen.....	205,883	189,601	L.	16,282 8.6
Net earnings.....	71,563	30,741	L.	35,822 94.8
P. c. of expenses.....	65.20	80.45	D.	15.25 19.0
Ind., Bloom. & W.....	93,160	93,176	D.	16 .....
International & Gt. Northern.....	109,939	136,055	D.	26,116 19.2
New Jersey Midland.....	36,329	42,631	D.	4,302 10.1
Paducah & Memphis.....	26,671	26,551	L.	122 0.5
St. Louis & Southeastern.....	17,615	15,508	L.	2,107 13.6
St. Louis & Southeastern.....	83,130	81,472	L.	1,658 2.0

First week in March:

	1877.	1878.	Inc. or Dec.	P. c.
Denver & Rio Grande.....	\$14,941	\$10,454	L.	\$4,487 42.7

Week ending March 9:

	1877.	1878.	Inc. or Dec.	P. c.
Grand Trunk.....	\$180,095	\$160,820	L.	\$19,275 12.0

### Coal Movement.

Coal tonnages for the week ending March 9 are reported as follows:

	1877.	1878.	Inc. or Dec.	P. c.
Anthracite.....	272,761	317,331	Dec.	44,570 14.0
Semi-bituminous.....	36,793	28,113	Inc.	8,680 30.9
Bituminous, Pennsylvania.....	40,953	.....	.....	.....

The miners in the Cumberland region are reported as gradually agreeing to the proposed reduction in wages, and a good many of them are at work.

Shipments out of the pools on the Monongahela River above Pittsburgh for the two months ending Feb. 28 were 697,254 tons of coal and 1,050,100 bushels of coke.

The actual tonnage passing over the Pennsylvania & New York Railroad for the three months from Dec. 1 to Feb. 28 was:

	1877.	1878.	Decrease.	P. c.
Anthracite.....	143,763	186,741	42,978	23.0
Bituminous.....	78,765	102,092	23,327	22.8

Total.....222,528 288,833 66,305 22.9

The coal tonnage of the Pennsylvania Railroad for the two months ending Feb. 28 was:

	1877.	1878.	Decrease.	P. c.
Anthracite.....	75,454	101,039	25,585	25.3
Semi-bituminous.....	202,652	243,225	40,573	16.7
Bituminous.....	258,943	290,190	31,247	10.8
Coke.....	155,493	162,839	7,346	4.5

Total.....692,532 797,293 104,761 13.1

Compared with the same period in 1876 the total tonnage shows an increase of 98,668 tons, or 16.6 per cent.

A conference was lately held in Atlanta, Ga., to settle the rates on coal to that city. Its chief supply has hitherto come from Tennessee, but lately shipments have been made from mines on the South & North Alabama, by way of Montgomery, at lower rates than were charged from the Coal Creek mines in East Tennessee. A conference was therefore called to agree upon a uniform rate.

The Anthracite Board of Control met March 20, and fixed the production for April at 1,125,000 tons. The production in April last year was 1,712,653 tons.

### Grain Movement.

Receipts and shipments of grain of all kinds for the week ending March 9 were, in bushels:

	1877.	1878.	Increase.	P. c.
Northwestern receipts.....	2,893,118	1,500,596	1,392,522	88.8
Shipments.....	2,341,877	1,041,102	1,300,775	125.0
Atlantic receipts.....	3,253,417	2,719,700	533,648	18.6

The receipts at the Northwestern markets are the largest for six weeks, and the shipments from those markets have been exceeded but twice since November. The receipts at Atlantic ports, on the other hand, have not been so small since early in January, and have been smaller but four weeks in the past fourteen.

Of the receipts at Atlantic ports, 45.8 per cent. was at New York, 22.8 at Baltimore, 14.6 at Philadelphia, 11.6 at New Orleans, 5.1 at Boston, and 0.2 at Portland.

### Erie Canal Opening.

The New York Superintendent of Public Works hopes to have the Erie Canal open for navigation on or before April 10, a month earlier than usual. The canal bed is said to be in excellent condition. The lakes being already open, there will probably be cargoes for the canal boats in Buffalo however early the canal may be open.

### Passenger Rates.

The Chicago Inter-Ocean reports that the agreement made some five months ago to maintain passenger rates and to cease paying commissions to agents, has been broken, and that the Lake Shore has, in consequence, announced its intention of withdrawing from the agreement. The Canada Southern is also expected to withdraw, and a general cutting of passenger rates is looked for.

### Southern Freight Rates.

At the same time that the Southern Railway & Steamship Association was in session at Atlanta, a meeting of general freight agents of the eastern lines was held in Baltimore to discuss the same question, the maintenance of rates. The several lines were represented as follows: Carolina Central Dispatch, by F. W. Clarke; Richmond & Danville, by Solomon Hass; York River Line, by Reuben Foster; Seaboard & Roanoke, Raleigh & Gaston and Raleigh & Augusta Air Line, by E. G. Ghio; Richmond & York River Railroad, by H. T. Douglass; Charlotte, Columbia & Augusta, by W. H. Fitzgerald; Charleston line of steamers, by Edwin Fitzgerald. Mr. F. W. Clarke was chosen Chairman, and W. H. Fitzgerald, Secretary. After a full interchange of opinion and discussion of the insurance differences between railroad and steamship lines, it was agreed to increase and fix the rate from Baltimore to Charlotte at \$1.05, 90 and 75 cents for first-class, and 70, 55 and 40 cents for second-class freights, and the usual difference of 10 cents on first-class and 5 cents on second-class higher, from New York and Philadelphia. These rates will go into effect on the 25th inst., and mutual pledges were exchanged to maintain them.

### Texas Refrigerator Car Line.

A line of refrigerator cars between St. Louis and Galveston has been established over the St. Louis, Iron Mountain & Southern and the International & Great Northern roads, the Tiffany Refrigerator Car Company furnishing the cars. The line is to be run chiefly for early vegetables, fruits, and other perishable market supplies. The rates from all Texas points to St. Louis will be 80 cents per 100 lbs. for articles requiring cold storage, and 70 cents per 100 lbs. for those not requiring cold storage.

## THE SCRAP HEAP.

### Railroad Manufactures.

The Revolving Scraper Co., of Columbus, O., has recently filled orders for its goods to be used in the construction of important works in Idaho. It has also made recent shipments to Colorado to fill orders for the contractors' plow and revolving scraper. The company confines its work strictly to the manufacture of a line of implements for removing earth. Its revolving scraper is well known to contractors, and it also makes contractors' plows and wheelbarrows.

Porter, Bell & Co., at Pittsburgh, have an order for four engines for the Pittsburgh, New Castle & Lake Erie road, two to be delivered next month and two in July.

The Detroit Bridge & Iron Co. lately completed a new iron bridge over the Galena River for the Illinois Central, to replace an old wooden bridge.

The Pittsburgh Forge & Iron Works are now running double turn.

The mills of Graff, Bennett & Co., at Millvale, Pa., recently turned out some iron plates 46 ft. by 48 in. by 1/4 in. They are for use in a bridge.

The Warren Foundry & Machine Co., at Phillipsburg, N. J., has secured a large contract for cast iron water pipes for the Boston water works.

Mr. Henry Chisholm, late Vice-President and General Manager, has been chosen President of the Cleveland Rolling Mill Co. Mr. A. B. Stone, the late President, becomes Vice-President, and will retain special charge of the agency in New York.

The real estate of the Clinton Iron Works, at Kirkland, N. Y., was sold under foreclosure March 16, and bought in by the bondholders for \$35,000. Negotiations are in progress for a reorganization of the company.

The Lynchburg (Va.) News says: "The contract for the iron bridge across the river, connecting this city with Amherst, has been awarded to the Western Bridge Co., of Fort Wayne, Indiana. A very gratifying feature of the arrangement is that a large part of the iron work—70 per cent. as we learn—is to be done in our own city."

The Graham Iron Works, in Pulaski County, Va., are running a part of the works making blooms, which are rolled into horse-shoe and other irons for local sale.

Out of 10 blast furnaces in Pulaski County, Va., not more than two will run this year. Most of these furnaces, however, are under great disadvantages, being some distance from railroad transportation and also of antiquated construction, so that they are not able to work economically, although the local ores are of very fine quality.

Wm. Chisholm & Sons are about to establish a shovel factory at Cleveland, O. They will manufacture their own steel under the Lowman patent.

The Phoenix Iron Works, at Ashtabula, O., have added to their tools a Bradley cushioned hammer weighing 5,000 pounds.

The Boston & Albany shops at Springfield recently turned out a new passenger engine with 18 by 22 in. cylinders and 6 ft. drivers; it has the Eames vacuum brake. The shops are now building the heaviest freight engine yet put on the road. It will be an eight-wheel "American" engine with 18½ by 28 in. cylinders and 4½ ft. drivers and will weigh about 40 tons.

### Sentenced for Negligence.

In August last a collision occurred between a passenger train and the pay train on the Southwest Pennsylvania Branch of the Pennsylvania Railroad, by which two persons were killed and several injured. Subsequently the Grand Jury indicted W. H. Batchelor, the conductor, and Samuel McIntyre, the engineer of the pay train, for criminal negligence in the case. They have recently been tried and were last week sentenced to 30 days' imprisonment and \$100 fine each.

### Prices of Iron.

Philadelphia prices of iron are quoted as follows: Pig iron,



prices steady; No. 1 foundry, \$18.50 to \$19 per ton; No. 2, \$17 to \$17.50; gray forge, \$16.50 to \$18; mottled, \$15.50 to \$16.

Plate and tank iron, prices irregular and weak; tank iron, 2.3 to 2.5 cents per pound; shell iron, 2.75 to 2.90 cents; flange iron, 3.75 to 4 cents; solid fire-box, 4.85 to 5 cents; best bloom, 5.5 to 6 cents.

Sheet iron, a full average business; refined sheet, from 3.2 to 3.7 cents per pound; "Philadelphia Russia," 7 to 7.5 cents; patent planished, A, 9.5 cents; patent planished, B, 10.5 cents.

Bar iron is quiet with little sale except for best qualities; best refined, 2 cents per pound, with other descriptions down to 1.6 cents.

Old car wheels are in some demand, and are quoted at \$17.50 to \$18 per ton, delivered. Old car axles nominal at \$25 to \$26 per ton. Hammered shafting, small sales are reported at \$28 per ton; sales of wrought scrap are reported at \$22 to \$23; cast scrap, \$15 to \$16 per ton.

#### Ten New Railroads.

The following advertisement appears in the Boston Advertiser of March 15:

##### TO RAILROAD CONTRACTORS.

Proposals wanted for the entire construction of ten railroads in different parts of the country. Address P. O. Box 2,888, Boston, Mass.

#### Pumps versus Injectors.

The Engineer, of March 1, contains a report of experiments made by Mr. D. Drummond, Locomotive Superintendent of the North British Railway, to determine the relative economy in the consumption of fuel resulting from the use of feed pumps and injectors. Of these experiments, The Engineer says: "It will be seen from this that in practice no difference was found to exist worth naming, and, as a result, Mr. Drummond is now using the injector to the exclusion of pumps."

#### Steam Street Cars.

A steam car invented by E. H. Angamar, of New Orleans, is being tried on the Washington & Georgetown line, and is said to work very well. It is described as "non-explosive," whatever that may mean.

The Baldwin Locomotive Works have just received orders from the Bushwick Railway Co., of Brooklyn, N. Y., for two of their separate steam motors to be used in working that line. Also from the Broadway Railroad Co., of Brooklyn, for one additional motor. The last named company has already in service two steam cars and one separate motor on its Cypress Hills & East New York line. This branch was built especially for the use of steam, and the motors and cars on the same are giving good satisfaction. Both of the above lines are understood to be part of the system controlled by the Brooklyn City Railroad Co. That company introduced steam cars and separate motors on its Fort Hamilton line last August.

#### Pole Railroads.

Referring to our recent note concerning the use of tracks made of poles to carry log cars in the Wisconsin pineries, the Pensacola (Fla.) Gazette says:

"The pole railroad, with wheels as described, was invented and put in use in Santa Rosa County about eight years ago. The grooved wheels were made at the Milton Foundry, and the car bodies at Blackwater Mills. They were introduced by the loggers of Simpson & Co."

#### Notes.

Several passenger trains on the Erie Railway have lately been fitted with the Westinghouse brake. Standing by one of the engines in the Port Jervis yard a few days ago, a freight engineer volunteered an explanation of its workings. Presently a quiet bystander suggested a slight correction, and the freight man turned on him with lofty scorn and asked what in thunder he knew about an engine. "Not much," said the quiet bystander, "only I put that brake on that engine, and I have done nothing else but put up those brakes for the last seven years." The lecture on the Westinghouse brake came to a sudden end.

It is noted that the man who travels every day gets along very comfortably with one seat in the cars, but the man who travels once a year needs at least four.

"Why," asked a Morristown man, pointing to a solitary track-walker in the depths of the Bergen tunnel on the Delaware, Lackawanna & Western road—"Why is that man like the President of this road when he turns out the gas at night?" The rest of the whistle party gave it up. "Because he's lone in the dark. See? Sloan?" He was promptly put in the baggage car, and a brakeman instructed to sit on him if he seemed dangerous.

#### A Long Mail Route.

The contract for the longest single mail route in the United States was recently awarded to Col. J. T. Chidester, of Arkansas. The route is from Fort Worth, Texas, by way of El Paso to Fort Yuma in Arizona, about 1,800 miles. The service is to be performed daily in coaches and the contract price is \$137,000 per year, which is about 14¢ cents per mile.

### RAILROAD LAW.

#### Iowa Railroad Law.

The new law just passed by the Iowa Legislature has not yet come to hand, but the following summary of it is taken from local papers.

Section 1 repeals the present law, except the sections which provide that the maximum rates of fare shall be 3 cents per mile for roads of the first class, 3½ cents for those of the second and 4 cents for those of the third class, also require railroads to make annual statements of receipts to the Governor for the purpose of assessing their proper taxation.

Section 2 authorizes the Governor and the Executive Council to appoint three commissioners, one of whom must be a civil engineer, who shall hold office one, two and three years from April next; each April following a commissioner is to be appointed by the Governor for three years; no person pecuniarily interested in railroads is eligible to the office of Commissioner.

Section 3 defines the duties of commissioners as follows: "They shall have the general supervision of all railroads in the State operated by steam, and shall inquire into any neglect or violation of the laws of this state by any railroad corporation doing business therein, or by the officers, agents or employes thereof, and shall also from time to time carefully examine and inspect the condition of each railroad in the state, and of its equipment, and the manner of its conduct and management with reference to the public safety and convenience; and for the purpose of keeping the several railroad companies advised as to the safety of their bridges, shall make a semi-annual examination of the same and report their condition to the said companies."

Section 4 requires them to report to the Governor annually in December such facts as have come under their observation, with such recommendations as they may think proper. Their report must state the capital stock, cost, debt, cash

value and statistics of business of each road for the year ending in June.

Section 5 requires managers of railroads to give to the commissioners statistics for making the report called for in the preceding section, and a penalty of \$100 per day is affixed for every day's delay after the 16th of September.

Section 6 provides that the commissioners shall have an office in Des Moines, furnished at the expense of the state, with a secretary whose salary shall be \$1,500; the salary of the commissioners shall be \$3,000 per annum each.

Section 7 requires the commissioners to give bond in the sum of \$10,000 each.

Section 8 assesses the salaries and current expenses of the commissioners on the railroads of the state.

Section 9 gives the commissioners power to examine the books, paper, etc., of railroad corporations, and to subpoena witnesses; and whoever willfully obstructs such investigation may be fined not exceeding \$1,000.

Sections 10, 11, 12 and 13 are as follows:

"It shall be the duty of any corporation, when within their power to do so, and upon reasonable notice, to furnish suitable cars to any and all persons who may apply therefor, for the transportation of any and all kinds of freight, with all reasonable dispatch and to provide and keep suitable facilities for the receiving and handling the same at any depot on the line of its road.

"No railroad corporation shall charge, demand or receive from any person, company or corporation, for the transportation of persons or property, or for any other service, a greater sum than it shall at the same time charge, demand or receive from any other person, company or corporation, for a like service, from the same place or upon like condition and under similar circumstances; and all concessions of rates, drawbacks and contracts for special rates shall be opened to and allowed all persons, companies and corporations alike, at the same rate per ton per mile, by car load, unless by reason of the extra cost of transportation per car load from a different point, the same would be unreasonable and inequitable.

"No railroad company shall charge, demand or receive from any person, company or corporation, an unreasonable price for the transportation of persons or property, or for the handling or storing of freight, or for the use of its cars, or for any privilege its service afforded in the transaction of its business as a railroad corporation.

"Any railroad corporation which shall violate any provisions of this act, as to extortion or unjust discrimination, shall forfeit for every such offense, to the person, company or corporation aggrieved thereby, three times the actual damages sustained, or overcharges paid, by the said party aggrieved, together with the cost of suit to be recovered in a civil action therefor."

Section 14 provides that in a case of a railroad accident resulting in loss of life, the company owning the road shall give immediate notice of the accident to the commissioners, who shall inquire into the facts at once and report to the Governor whether it was the result of mismanagement or neglect, provided such report is not to be used as evidence in Court.

Section 15 authorizes the mayor and aldermen of any city, or trustees of a township, or if they refuse or decline, 25 or more legal voters of the city or township, to petition the commissioners to make an examination of the rate of passenger fare or freight tariff charged by any railroad company, and if they deem the complaint of importance they shall adjudicate the matter within ten days and report their doings to the Governor.

Section 16 defines what is understood by the term "railroad."

Section 18 repeals all laws inconsistent with this act, and Section 19 provides for its publication and going into effect immediately.

#### Injury to Employee.

In Crutchfield against the Richmond & Danville Company in the North Carolina Supreme Court, the plaintiff was a brakeman, and one of his regular duties was to couple and uncouple the cars. He was injured in the performance of that duty, the engine and road-bed being defective. Held, Whether in the discharge of his duty, at the time of the injury, he acted with ordinary care and caution was a material inquiry upon the issue as to contributory negligence. Where both employer and employee have equal knowledge of defects in the machinery, and the employee continues in the service, and in the discharge of his regular duties, each party takes the risk. If he knew the engine was defective, a greater degree of caution was imposed upon him. It was error for the Court to refuse the following instruction asked by the defendant "if the plaintiff knew, or had reasonable grounds to know, that the engine used by the defendant was not controllable by the engineer, and that the road-bed was in a dangerous condition, and the plaintiff was injured in attempting to couple the cars, he was guilty of contributory negligence and could not recover." This point was not decided when the case was before the Court before, 76 N. C., 320.

#### Tennessee Tax Cases.

The following are recent decisions of the Tennessee Supreme Court, as reported by the Nashville American: "In the case of Wilson, Receiver, vs. Gaines, Comptroller, Judge Turney delivered the opinion. The case involved a claim of exemption from taxation of that portion of the St. Louis & Southeastern Railroad which lies in Tennessee and was formerly the Edgefield & Kentucky Railroad. By the charter of that company it was claimed that it had the rights and privileges of the Nashville & Chattanooga road. By the charter of that road, section 38, the capital stock was forever exempted from taxation, and the road, with its fixtures and appurtenances, including workshops, warehouses and vehicles for transportation, were exempted from taxation for twenty years from the completion of the road. The Edgefield & Kentucky Railroad has been sold at the suit of the State to satisfy the State's lien and was bought by Davidson County. By the county it was sold to the American Contract Company, and by it had been sold to parties who consolidated it with other lines to constitute the St. Louis & Southeastern Railroad.

"The Court held—1. That by the words 'rights and privileges' of the Nashville & Chattanooga Company in the charter of the Edgefield & Kentucky Railroad Company the exemption from taxation was not conferred, the constitution of 1834, by its use of these words, in connection with 'exemptions and immunities,' giving them a restricted meaning.

"2. That if the exemption existed it was not capable of being assigned except by legislative consent, and that the assent of the Legislature to its transfer to the purchaser at the State lien sale would not make it assignable in sales thereafter.

"Judge McFarland delivered the opinion of the Court in the case of the Memphis & Charleston Railroad Company vs. Gaines, Comptroller. The counsel for the road claim that, under an exemption similar to that of the Nashville & Chattanooga Railroad Company of capital stock forever, and of the road and appurtenances for twenty years from the completion of its road and no longer, the road, so far as it was constructed by the use of 'capital stock,' was perpetually exempt. The Court held that the words of the latter clause

were clear and free from ambiguity, and that whatever the Legislature meant by the exemption of 'capital stock,' it was evident that they intended that the road, etc., should be taxed after twenty years, and that without any reference to the source whence the means for its construction was derived.

"It was also insisted by the company that, they having accepted the provisions of the eleventh section of the act of 1875, and agreed to pay a tax of 1½ per cent. on their gross earnings, in lieu of all other taxes, while their exemption for twenty years was yet unexpired, it was a contract which the State could not violate. But the Court held that the Legislature, under the constitution of 1870, did not have the authority to make the contract, so as to grant any new exemption or to extend an old one beyond the time for which it was already valid.

"The Knoxville & Charleston Railroad Company claimed an exemption under a reference to the Nashville & Chattanooga Railroad charter, granting the Knoxville & Charleston road the 'rights and privileges' of the other for the 'construction and running' of the road. This was held not to confer the exemption from taxation.

"The Mobile & Ohio Railroad Company has an exemption from taxation for twenty-five years from the completion of their road, which has not expired. The Court recognized the validity of this and declined to go into the question of a further exemption claimed, namely—until the dividends shall exceed 8 per cent.—which the company sets up under its charter—the first exemption being conclusive of the present case."

It is understood that an appeal will be taken to the Supreme Court of the United States.

### OLD AND NEW ROADS.

**Alabama & Chattanooga.**—In a review of the litigation concerning this road the Montgomery (Ala.) Advertiser and Mail says: "About a year ago John Swann became the purchaser of the road, under decrees of the United States Circuit Court at Mobile.

"In June last, Swann's purchase was confirmed by the Court, and in the decree of confirmation the Court retained its control over the road, and reserved the power to make, at any future time, any order which it could then have made to protect the purchaser and perfect his title.

"The attention of the United States Circuit Court at Mobile was called to these new suits, at its recent term, by Swann, and on his application, and for his protection, that Court, within the last fifty days, has made several orders and decrees, for which that Court is entitled to great credit. These orders and decrees will soon enable the present owners of the road to end the pestilential litigation concerning it, and to put it in condition to promote effectively the great public purposes for which it was designed."

The suits referred to are two in number. The orders made by the Court are briefly stated as follows:

"1. A decree postponing until the 4th Monday in June any further payment by Swann, awarding a special injunction and rule for contempt against the complainant and his solicitor and agents in the bills filed at Huntsville and Atlanta.

"2. A decree which divested all title out of Wells, Smith and Dunn, as trustees and purchasers for the bondholders for whom in 1876 they purchased, but who never complied with the terms of the purchase, and invested Swann with the title.

"3. An order granting leave to Swann to file a bill to review, reverse and annul the decree of June term, 1877 allowing the claim of John S. Wright and his executors for 111 receiver's certificates and interest thereon as a lien on the road.

"4. An order continuing until next term a petition of Swann for leave to file a bill to review and reverse decree of June term, 1877, confirming report of Master Gibbons in favor of various persons, whose names were put in as laborers, mechanics, etc., etc.

"5. An order setting aside *ex parte* orders obtained by John Demerit and by Demerit and others without any notice to Swann, in relation to various receivers' certificates, explicit provisions as to which had been made by decrees rendered before Swann's purchase, and never complied with by Demerit or Demerit and others.

"6. A decree that all claims heretofore or hereafter paid by Swann which have been established by this court as liens upon the road in the hands of the purchaser shall, notwithstanding such payment, continue to be effectual liens upon the road, in his favor and for his protection, against all persons who assail or draw in question the title derived from and under his purchase under the decrees of this court."

**Annapolis & Elkridge.**—A committee of the Maryland Legislature has been investigating the affairs of this company, and especially the transfer some years ago of a controlling interest in its stock to the Baltimore & Drum Point Company, and the subsequent issue of new bonds. The testimony shows that most of this issue of bonds was used for the benefit of the Drum Point road and that prompt action is necessary to prevent the loss of the State's interest in the road. The committee will report recommending that Attorney-General Gwynn be instructed to institute such proceedings as will set aside the mortgages on the road and free it from the control of the Drum Point Company.

**Arkansas & Tennessee Bridge.**—A bill has been introduced in Congress authorizing the Arkansas & Tennessee Bridge Company, and the Tennessee Construction & Contracting Company, to erect a bridge over the Mississippi River from Memphis, Tenn., to Hopefield, Ark., having one unbroken or continuous span, of not less than 500 feet, from pier to pier, over the main channel, and to be so built as not to interfere with the free navigation of the river. If preferred, however, the companies are to have the privilege of constructing a tubular bridge through the waters of the river, or a tunnel thereunder, provided that the same does not interfere with the navigation of the river.

**Baltimore & Ohio.**—The bill providing for a compromise as to past taxes and future taxation of this company's property in Maryland has passed the State Senate. Its leading points were noted last week; the sections requiring the company to exchange business with the Chesapeake & Ohio Canal at Cumberland have since been amended so as to allow the railroad to use its own cars in the transportation of coal over the branch roads to the canal basin; also that the freight rates fixed by the bill shall not apply to lumber brought over the Baltimore & Ohio road from points west of Maryland. This, it is understood, removes all opposition to the bill on the part of President Garrett. There is said to be little doubt of its passage through the lower House.

A decision has been reached in the suit of the Sandusky, Mansfield & Newark Company against this company, as lessee of its line. The suit was brought to recover 15 per cent. of the earnings of the leased road on the transportation of coal from Straitsville, and judgment was rendered for the plaintiff for \$43,255.22. The defendants claimed that the lease referred to local traffic, and by its terms this percentage was not due, as the coal was carried from their line to other roads. The plaintiff claims further a proportion of



earnings on a large amount of coal shipped over their line to the Chicago Division of the Baltimore & Ohio Railroad for the company's use on that division, and for a certain percentage of the pocket charges at Sandusky, which is used for the transportation of coal from the cars to the lake vessels.

**Big Sandy.**—A meeting was held last week in Cincinnati to consider the prospects of the proposed line from the Ohio River up the Big Sandy. It was stated that about \$180,000 in cash subscriptions had been promised, besides grounds for a terminus at Ceredo, W. Va., and some graded road-bed now owned by the Ceredo Mining Company. A committee of ten was appointed to push the project and secure local subscriptions.

**Bismarck & Black Hills.**—This company has been organized at Bismarck, Dakota, to build a railroad of 3 ft. gauge from that place (the terminus of the Northern Pacific) to some point in the Black Hills region.

**Boulder, Central & Caribou.**—This company has been organized to build a line from Boulder, Col., to Central City and thence to the eastern line of Utah, with branches to Black Hawk, Idaho, Georgetown and Hot Sulphur Springs. The capital stock is to be \$300,000. The line covers ground already occupied by the Colorado Central, and where there is certainly no room for two roads.

**Brooklyn, Flatbush & Coney Island.**—This company asks for proposals for the whole or any part of an issue of \$250,000 first mortgage bonds on its road now under construction. The bonds will bear 7 per cent. interest, and will not be sold at less than par. Bids will be received until April 1, at the office of the company, No. 185 Montague street, Brooklyn, or at the office of A. B. Baylis, No. 44 Exchange Place, New York.

**Buffalo Oil Pipe Line.**—A large meeting was held in Buffalo, March 19, in favor of the proposed oil pipe line from Bradford to Buffalo. A number of speeches were made and a committee was appointed to go to Albany and urge upon the Legislature the passage of the bill authorizing the construction of the line.

**Central of Iowa.**—It is said that an effort is being made to have Mr. J. B. Grinnell removed from his position as Receiver of this road. Col. Milo Smith, of Clinton, Ia., is mentioned as his successor if the movement is successful. Latest advices are that Col. Smith has been appointed Receiver.

**Columbus & Washington.**—This company was recently organized and has already begun the preliminary surveys for a narrow-gauge line from Columbus, O., southwest to Washington Court House, about 40 miles. It is intended to connect with the Columbus, Washington & Cincinnati road, now under construction.

**Chicago, Milwaukee & St. Paul.**—It is stated that this company will soon begin work on the extension of its Iowa & Dakota Division from Algona, Ia., westward to some point on the Sioux City & St. Paul road. As already noted, it has secured the land grant for this extension.

The company will also extend its Hastings & Dakota Division in Minnesota westward this season. The St. Paul *Pioneer Press* says: "Messrs. R. B. Langdon & Co. (R. B. Langdon, D. C. Shepard, and A. L. Linton) have taken a contract to build a seventy-mile extension of the Hastings & Dakota Railroad, from Glencoe to Granite Falls, this season. They have already inaugurated the work, and expect to have it completed by the 1st of October."

**Chicago & Iowa.**—The trustees who bought this road at the recent sale are preparing a plan for the organization of a new company. The intention is to operate the road independently, except that a new traffic contract with the Chicago, Burlington & Quincy will probably be made.

**Chicago & Northeastern.**—Local papers continue to report that a controlling interest in this road has been bought by Mr. W. H. Vanderbilt. The road is 49 miles long, from Flint, Mich., to Lansing, and is now worked as part of the Chicago & Lake Huron road. Mr. Vanderbilt's object is said to be to prevent the use of the road by the Grand Trunk as a line to Chicago.

**Denison & Southeastern.**—The track on this road is now laid to the new town of Whitewright, 25 miles southeast from Denison, Texas, and 10 miles beyond the recent terminus at Belplaine. A freight depot has been put up at the terminus, and quite a town is springing up there.

**Denver & Rio Grande.**—Ground has been broken on the extension of this road from Garland, Col., to Alamosa. It is thought that nothing will be done on the extension from El Moro south until the Alamosa line is finished.

**Detroit & Milwaukee.**—Receiver Trowbridge's report for February is as follows:

Nominal balance Feb. 1	\$67,162.53
Receipts from all sources	80,968.40
Total	\$148,130.93
Current disbursements	\$87,217.90
Interest coupons paid	9,950.00
	97,167.90

Balance, March 1. \$60,963.03  
The disbursements exceeded the receipts by \$16,199.50. There were \$343,598.70 Receiver's notes and certificates outstanding March 1, this amount being the same as the previous month.

**Erie.**—In the examination of the Receiver's accounts before the Referee, counsel for Talbot and others have presented a list of specific objections to items of the accounts. On behalf of Receiver Jewett answers to each of the objections have been submitted to the Referee.

Argument on the exceptions was begun before the Referee on March 14. The points most strongly urged were against the items for the Receiver's salary and for certain expenditures for telegrams, etc., to the Reconstruction Committee. The hearing was adjourned until March 18, when it was again adjourned.

An order has been granted requiring the company and others to show cause why James McHenry should not be allowed to intervene in the foreclosure suits of the Farmers' Loan & Trust Company and J. C. Bancroft Davis against the company.

Argument on this McHenry application to intervene was heard March 20, but no conclusion was reached, the matter being put over to March 22. Counsel for the company state that in the Potter case, another of the so-called McHenry suits, they have affidavits from nearly all of the American plaintiffs that their names were used without authority from them.

**Green Bay & Minnesota.**—Since the appointment of a receiver for this road the employes have been receiving their pay, which was badly in arrears. Within the past month the pay car has made three trips over the line, and the men have been paid off for December, January and February.

**Houghton & St. Helen's Lakes.**—The difficulty of getting out logs from the Michigan pines last winter has

stimulated the construction of lumber railroads. The last one proposed is a line from Lake Houghton to St. Helen's Lake, about 24 miles, with some short branches to reach sections of forest. Mr. S. C. Hall, of Muskegon, Mich., is the leader in the project.

**Houston & Texas Central.**—This company reports its earnings as follows for the ten months of its fiscal year from May 1 to Feb. 28:

	1877-78.	1876-77.	Decrease.	P. c.
Gross earnings	\$2,350,412	\$2,617,456	\$367,044	14.0
Expenses	1,412,615	1,637,498	224,883	13.7
Net earnings	\$937,797	\$979,958	\$42,161	4.3
Per cent. of expenses	60.11	62.50	2.39	3.8

The expenses include all taxes paid for the year.

**Indianapolis, Cincinnati & Lafayette.**—Receiver Ingalls reports for February as follows:

Balance from January account	\$5,221.60
Receipts for February	174,967.44
Total	\$180,189.04
Disbursements	172,190.73
	\$7,998.31

Balance to March account. \$7,998.31  
The receipts were \$2,776.71 in excess of the disbursements.

**Jacksonville, Pensacola & Mobile.**—The stockholders of the old Pensacola & Georgia Company met in Quincy, Fla., recently. A committee was appointed to investigate the legal status of the stockholders and see what measures can be taken to recover their rights in the property, which, it is claimed, was fraudulently sold and transferred to the Jacksonville, Pensacola & Mobile Company.

**Joplin.**—It is proposed to extend this road from Joplin, Mo., southward to some point on the Little Rock & Fort Smith road. The distance from Joplin to the nearest point on the Fort Smith road is about 140 miles.

**Lake Erie, Alliance & Wheeling.**—The bondholders have interposed to prevent the sale of this road by the Sheriff, and it has been indefinitely postponed. What further action they will take is uncertain.

**Lehigh Valley.**—The Lost Creek Branch has been completed and opened for traffic as far as Girardville, Pa., five miles from the junction with the Mahanoy Branch at the Lost Creek Breaker, near Shenandoah. An extension of the branch to Ashland, some four miles further, is delayed by some difficulty about the right of way. This branch carries the road into territory heretofore served exclusively by the Reading.

**Long Island.**—The suit begun by the Attorney General of New York for the removal of the Receiver and the dissolution of the company, has been discontinued, the Attorney General stating that he had been misled as to the facts when he authorized the suit, and that the charges made before him had not been substantiated. Moreover a petition for the continuance of Col. Sharpe as Receiver had been signed by most of the creditors and by holders of nine-tenths of the stock.

**Mobile & Alabama Grand Trunk.**—The estimated cost of the extension of this road from Jackson, Ala., to the Alabama Central at Uniontown, about 78 miles, is \$1,135,000. Of this sum the contractors have agreed to take \$635,000 in the company's premium bonds, leaving \$500,000 to be raised by the sale of those bonds by the company. Of this amount the company hopes to raise \$150,000 in Mobile and the rest in counties on the line of the extension. The whole amount of the issue of bonds is to be \$2,500,000, part of which is to be used to retire the company's existing debt of \$1,125,000.

**Mobile & Ohio.**—Last week we noticed the payment of a dividend of 4 per cent. on the first mortgage bonds of the Trustees and Receivers. The Committee of Reorganization now announce to the holders of certificates "under the agreement dated Oct. 1, 1876, that the United States Circuit Court for the Southern District of Alabama, having authorized Messrs. Duncan and Elliott, Trustees and Receivers of said railroad, to declare, out of the net revenue, other than that derived from the 118 miles of the said road lying within the State of Tennessee, a dividend payable to the bonds secured by the mortgage known as the sterling first mortgage, dated Nov. 1, 1853, and the committee, having received said dividend on the amount of said bonds in their hands will, on and after the 20th inst., pay to the holders of the Committee's certificates on presentation at the office of the Farmers' Loan & Trust Company in the City of New York, or for those certificates issued at Mobile at the Bank of Mobile in that city, the equivalent of the first two coupons, viz.: that of Dec. 1, 1877, and June 1, 1878, upon the new first mortgage bonds named in said certificates, being in all 4 per centum on the amount of said new first mortgage bonds. Payments will be stamped upon each of the certificates presented as follows:

"Received of Hays, Pierson and DuPuy, Committee of Reorganization, (\$.....) Dollars, in lieu of the coupons due 1st December, 1877, and 1st June, 1878, called for by the within Certificate, and the first mortgage bonds within called for will be issued without such coupons attached thereto."

The *Commercial and Financial Chronicle* says: "The dividend paid by Duncan, Receiver, is 4 per cent. upon the old bonds, while the dividend upon the certificates is but 4 per cent. upon the amount of new bonds called for by the certificates. On inquiry why this is so, the reply is that the dividend received by the committee has to be divided by them among all classes entitled to the new bonds under the reorganization rate, but that the dividend to the bonds outside of the scheme is a payment on account of principal, and it is uncertain how much more such bonds will receive; while the payment by the committee on the certificates is for interest upon principal. Those in the scheme expect that the road will be bought in by the committee for their benefit, while those not in must accept such dividends as the sale will yield them."

A special meeting of the stockholders was held in New York, March 19, at which resolutions were passed approving and ratifying the act of the Trustees and Receivers in negotiating a compromise with the State of Mississippi in settlement of back taxes on the company's property in that State.

**Minnesota Midland.**—This company has been reorganized, the leading men in the new management being Gen. L. F. Hubbard, of Red Wing; W. S. Wells and H. H. Palmer, of Zumbrota; Wm. Foster, of St. Paul, and James G. Lawrence, of Wabasha. It is understood that the Chicago party, Mr. Crawford, retains four-tenths of the capital stock of the new company.

**New Orleans Pacific.**—The Louisiana Legislature has passed the bill authorizing the loan of the credit of the State to this road. The company is to receive \$2,000,000 in State bonds to be used in the construction of the road, and is to deposit \$2,500,000 of its own first mortgage bonds in the State treasury as security for the loan.

The Governor, however, in signing the bill, expresses his doubts as to whether the proposed issue of bonds is constitutional. He says that he will, before signing the bonds, take

such action as will secure a decision on this point from the State Supreme Court.

**New Jersey Midland.**—The receipts of this road for February, and for the two months ending Feb. 28, were as follows:

	February.	Two months.
Passengers	\$7,275.18	\$19,110.18
Freight and milk	29,579.55	62,486.72
Express, mail and miscellaneous	1,474.57	15,004.10
Total	\$38,329.30	\$96,601.00
Working and terminal expenses	35,031.06	82,740.10
Net balance	\$3,297.64	\$13,860.90
Per cent. of expenses	91.40	85.07

The Receiver's account for the two months, may be condensed as follows:

Balance, Jan. 1	\$705.87
Road receipts	96,601.00
Loan account and suspense account	42,010.08
Total	\$139,316.95

Working and terminal payments	\$82,740.10
Right of way, construction and equipment	7,394.61
Middletown, Unionville & W. G. lease	1,500.00
Montclair & Greenwood Lake terminals	2,850.40
Receivers' certificates paid	12,000.00
Loan account, and sundry accounts	31,367.76
	137,752.87

Balance, March 1. \$1,564.08  
As compared with 1877, the gross receipts for February show a decrease of \$4,302.05, or 10.1 per cent; for the two months, an increase of \$3,766.25, or 4.1 per cent.

**New York Terminal Facilities.**—The application to the New York Board of Aldermen for leave to use the Belt (street) Railroad for freight cars at night and to make connections from its track to adjoining piers and warehouses is now having a hearing before a committee of the board. It is strongly opposed, chiefly by parties who are interested in the continuance of the present state of affairs requiring transfer of freight by teams and trucks, and by a few property holders.

**Northern Pacific.**—The bill extending the time for the completion of this road, as agreed upon by the Senate Committee, is a compromise measure. It extends the time for the completion of the road eight years and requires the company to build on the south side of the Columbia River to Portland and Kalama in Washington Territory. It throws all lands open to the settlement of preceptors at \$2.50 per acre, the proceeds to be paid into the United States Treasury, and by the Secretary of the Treasury placed to the credit of the company. When any section or sections of the road are completed and accepted by the Government, then the Secretary of the Treasury shall pay directly to the company the proceeds of all the lands designated by odd sections adjacent to the completed road, in which preemption acts are not attached to the company with restrictions that they shall be sold in quantities not exceeding 160 acres to one person, and at not exceeding \$2.50 per acre. The bill also provides for the protection of the settlers now on the lands. The even sections are to be thrown open to homesteaders, 160 acres to each person. It also permits those who have been restricted to 80 acres under the existing laws to enlarge their claims to 160 acres. The extension is on the express condition that the Northern Pacific Railroad Company shall commence the construction of their road at Portland, Oregon, within nine months after the date of the passage of the act, and construct at least 33 miles within one year thereafter on the south side of the Columbia River, and each year thereafter 100 miles of the road, at least 25 miles of which shall be on the Pacific Coast. The bill further provides that the road from Umatilla to Portland shall be a common road for the use of the Northern Pacific and the Portland, Salt Lake & South Pass companies, under such terms as they may agree upon, and in the event of a failure to agree, such terms as may be agreed upon by three persons selected by the President of the United States. The extension does not extend to the branch line across the Cascade Mountains, but lands on the branch amounting to 7,000,000 acres are restored to the public domain, and in lieu of these lands an equal amount is by the bill granted to the Portland, Salt Lake & South Pass Company, in aid of the road from Umatilla to Salt Lake, under like restrictions as to the sales of lands by the Government, and on condition that the company shall commence at Umatilla, within six months after the date of the passage of the act, and build and equip 25 miles of road within one year thereafter, 50 miles within each succeeding year, and the whole within four years from the commencement of the work.

**North & South, of Georgia.**—Local papers report that negotiations are in progress for the sale of this road to parties in Boston, who will agree to extend the line from its present terminus at Hamilton, Ga., 23 miles from Columbus, to Chipley, some 15 miles, within four months.

**Ohio & Mississippi.**—Receiver King's report for February is as follows:

Balance Feb. 1	\$199,768.61
Receipts	272,834.90

Total. \$472,603.51  
Vouchers prior to Nov. 18, 1876. \$187.96  
Vouchers and pay-rolls subsequent to Nov.

18, 1876	227,633.69
Interest on consolidated bonds due July 1, 1877	224,123.09
	451,944.74

Balance March 1. \$20,658.77  
The disbursements were \$179,109.84 in excess of the receipts.

The Illinois Railroad Commissioners have recently made an inspection of the Springfield Division and, it is said, found parts of it in very poor order. The *Springfield State Journal* says:

"They report the condition of the division, as to ties, road-bed and iron, none of the best, and in some places not even good. The report goes into detail as to the condition of the sections of the division, and while some portions are commended as good, and recent repairs are noted, it would appear that as a whole the division did not favorably impress the Commissioners, and they express the opinion that at some points fast time cannot safely be made over it. The Commissioners say they have furnished a copy of the report to Receiver King, and to Col. Charles A. Beecher, Attorney of the road, evidently believing that those officers, more than the press and the traveling public, would be interested in learning the condition of the road as found by the Commissioners during their recent trip."

**Painesville & Youngstown.**—The new opening of the Powers coal bank and of one or two other mines, and the recent clearing out of the bar at Fairport, the lake terminus of the road, has increased the business of this road very much. Receiver Martin has a number of men employed putting the road in better order and building new sidings, and to enable him to meet the new contracts for carrying coal, he has ordered three new engines and 100 coal cars.



**Peoria & Springfield.**—The following circular is issued by the Receiver, Mr. J. R. Hilliard:

"The Peoria & Springfield Railroad having been leased to the Pekin, Lincoln & Decatur Railway Company, to take effect from and after March 1, 1878, notice is hereby given to all persons and corporations having business with the Peoria & Springfield Railroad, to report to the Pekin, Lincoln & Decatur Railway Company, on and after that date."

As already noted, the lease is at a rental of \$3,000 per month; it is approved by the Court and will not interfere with the foreclosure suit.

The Peoria (Ill.) Transcript of March 14 says: "In Judge Cochran's court yesterday afternoon the case of the Peoria & Springfield road came up again, on a motion for the payment of what are known as the Newbold certificates. The judge ruled against the payment of the same. The certificates are five in number, each for \$5,000. They were executed by Mr. Hilliard, Receiver of the road, in February, 1877, to lift five others of the same amount which had been issued by James Haines, the former Receiver. The original certificates were given to B. E. Smith, of Columbus, O., for negotiation, and were bought by Newbold, Sons & Co., of Philadelphia, who took them at their cash value, less one per cent. commission, paying Smith \$24,750 for them in cash. These certificates were renewed by Mr. Hilliard, under order of the court. The ground on which their payment was resisted, as stated by Haines in an affidavit, was that he had never received from Smith any money for them or made any record of them on his books; and that Smith had applied the money to the payment of coupons on bonds held by him which he had no right to do. The Judge sustained this view of the case."

**Peterboro & Hillsboro.**—The grading of this road from Peterboro, N. H., to Hillsboro Bridge, 18 miles, was nearly all done last fall. Work will soon be resumed, and it is expected that the road will be completed by June. The new road connects with the Concord & Claremont at Hillsboro Bridge, and will complete a line from Concord either by the Boston, Barre & Gardner to Worcester, or by the Ware River road to Palmer on the Boston & Albany. It is also proposed to build a short cut-off from Thorndike on the Ware River to Three Rivers on the Springfield, Athol & Northeastern, making a more direct line to Springfield.

**Pittsburgh, New Castle & Lake Erie.**—The work on the first division of this road from Pittsburgh, Pa., to Zeilenople in Butler County, 31 miles, is said to be well advanced. The tunnel at Shaw's, 13 miles from Pittsburgh, is done, and that at Grubb's Summit is nearly finished. The ties for this division are being delivered, and the company hopes to begin track-laying about April 1. The right of way for the second division from Zeilenople to New Castle is all procured and grading begun. Four engines have been ordered and will be used in track-laying and ballasting.

**Pennsylvania.**—The temporary trestle bridge over the Raritan River at New Brunswick, N. J., was completed, so that trains began to run over it on the morning of March 14. The temporary bridge is 960 feet long, about 50 feet high, and was finished just four days after the old bridge was burned. Over 500 men were employed in the work, and it has cost the company about \$20,000. The erection of the permanent iron bridge will be continued as fast as possible.

**Southern Pacific.**—The Judiciary Committee of the House of Representatives at Washington has reported against approving the act of the Arizona Legislature granting special privileges and immunities to this company. This action is on the ground that under the organic law of the territory the legislative assembly have no power nor authority to grant special privileges.

**Southeastern, of Canada.**—Mr. H. E. Folsom, Receiver of the Mississippi & Clyde Rivers road, has notified Manager Foster, of the Southeastern, that he intends to take possession of that part of the road in Vermont at once, and to operate the same. The Southeastern trains will therefore run only to Abercorn, P. Q., the station nearest the Province line. Mr. Folsom is also Superintendent of the Connecticut & Passumpsic Rivers road, and this action indicates that the war between the two companies is to break out again.

**Springfield & Northwestern.**—It is stated that Eastern bondholders have deposited \$400,000 in bonds; Col. William, the purchaser at the recent sale, controls \$504,000, so that \$913,000 out of \$1,000,000 bonds will be represented in the organization of the new company.

**Springfield, Effingham & Southeastern.**—This company is said to be laying track on its line from Robinson, Ill., westward to Effingham, and to be nearly ready to begin laying the rails at Effingham, and also at Sullivan, Ind. The company expects to have the road completed from Effingham to Bloomfield, Ind., 95 miles, by July.

**South Mountain.**—The section from Jonestown, Pa., on the Lebanon & Tremont Branch of the Reading road, east by north to Fredericksburg is now ready for the ties, and all the bridges were to be finished last week, except that over the Swatara at Jonestown. This section is four miles long, and the company expects to have the cars running upon it early in April.

**St. Paul & Pacific.**—Our Amsterdam correspondent writes that the proposition of the Canadian and American parties for the purchase of the bonds has been accepted, as last amended, by a majority of the bondholders. The amended proposition provides that payment for the bonds bought shall be made six months after the foreclosure at the option of the buyers in gold coin, in 7 per cent. gold bonds of the new company at par with a premium of \$250 preferred stock for each \$1,000 bond, or in the same bonds at 90 without the stock premium. The buyers will control the bonds for the purposes of the foreclosure, and will pay all the expenses of the proceedings.

**St. Paul & Sioux City.**—This company, like the other Minnesota lines, is having a very large immigrant travel this season. The Land Department is also very busy, and the demand for good wheat lands is reported very active.

**Tennessee Railroad Taxation.**—The Tennessee Supreme Court has sustained the decision of the Chancellor in the railroad tax cases, laying down the rule that exemption from taxation can only be given by explicit grant, and must be confined within the narrowest limits. It further holds that the Legislature had no right to make the contract implied by the law of 1875. An appeal to the United States Supreme Court will be taken.

**Toledo & Woodville.**—The Mayor of Toledo, O., having vetoed the ordinance providing for the sale of the city's interest in this road to the Pennsylvania Company, the city council has refused to pass the ordinance over the veto. The road is now worked by the Pennsylvania Company, forming part of its Toledo Branch.

**Truckee & Lake Tahoe.**—It is proposed to build a narrow-gauge road from the Central Pacific at Truckee, Cal., to Lake Tahoe, a distance of 15 miles.

**Watered Stock.**—The Hartford Courant says: "The special House Committee of the Connecticut Legislature on Rail-

road Investigation met in the Senate Chamber last evening, and the subject of 'watered stock,' so called, was considered. President Bishop, of the New York, New Haven & Hartford road, said that after the Schuyler frauds the holders of the fraudulently issued stock began litigation against the New York & New Haven road. Finally it was proposed as a compromise to issue one share of good stock in exchange for two shares of over-issued stock, and about one-half the holders of the latter accepted the exchange and got a little over \$600,000 of good stock. The other holders continued their suits and at last got judgment against the company, and new stock was issued and sold to raise the money to meet those judgments. Both transactions were by authority of the Legislature. The stock of the road was depressed after the Schuyler frauds, going as low as \$50, and the new stock was sold for about \$75. That was all that ever occurred upon which to base the cry of 'watered stock.' There was no concealment of it, and, if it was desired to satisfy Mr. Goodwin, he was quite as willing to admit the issue of a million more of stock than was really issued. The old Hartford & New Haven road has never been charged with 'watering'; it built the Middletown and Suffield branches with the surplus earnings, and the stock was increased thereupon. Concerning the 'watered' stock of the Naugatuck road, he said that while some would call it watered the same people would not call it watering, where there had been an issue of bonds and stocks to contractors with extravagant liberality; and, instituting a comparison with the Connecticut Western road, said that the cost of the Naugatuck road per mile was less than the amount of first-mortgage bonds of that road."

**Warren, Bradford & Rochester.**—A company by this name is making surveys for a line from Warren, Pa., eastward up the Allegheny River to Kinzua, and thence east by north to Bradford, a distance of about 30 miles. The line is the same as that of the proposed extension of the Olean, Bradford & Warren road, and it has been proposed that the two companies unite in building it.

**Windsor & Annapolis.**—The Halifax (N. S.) Chronicle of March 12 says: "Yesterday morning the Honorable Judge in Equity delivered judgment in the case of the Windsor & Annapolis Railway Company against the Western Counties Railway Company, in favor of the plaintiff company on all the points. The judgment was lengthy and elaborate, and contained a minute discussion of all the questions involved. Among the most important points decided was that the Act of the 26th day of May, A. D., 1874, by which the Windsor Branch Railway was transferred to the Western Counties Railway Company, was *ultra vires* of the parliament of Canada, and was, therefore, insufficient for the purposes contemplated. The case was argued on the 27th of February last past, on a demurrer to the bill of the plaintiff company."

**Winona & St. Peter.**—The increasing business and immigration along the western section of this road has made regular train service necessary, and a daily train was put on last week between New Ulm, Minn., and the State line, a distance of 120 miles.

## ANNUAL REPORTS.

### Northern Central.

This company owns a line 138 miles long, from Baltimore to Sunbury, Pa., with an extension in Baltimore 4 miles long, and a branch from Relay House to Green Spring, Md., 9 miles, making 151 miles in all. It leases the Shamokin Valley & Pottsville road, from Sunbury, Pa., to Mount Carmel, 28 miles; the Elmira & Williamsport road, 78 miles; the Chemung Railroad, 22 miles, and the Elmira, Jefferson & Canandaigua road, 47 miles, the three last forming a continuous line from Williamsport, Pa., to Canandaigua, N. Y., 147 miles. Its trains use the Philadelphia & Erie track from Sunbury to Williamsport, 40 miles, for which no rental is paid, the use of the Northern Central track from Marysville to Sunbury, 47 miles, by the Philadelphia & Erie trains being taken as an offset. The total line worked is 326 miles besides the 40 miles used. The latest report is for the year ending Dec. 31, 1877.

The general statement at the close of the year is as follows:

Stock, (\$38.661 per mile).....	\$5,842,000.00
Maryland State loan, irredeemable, 6 per cent.....	\$1,500,000.00
Sinking fund 6 per cent. bonds.....	2,616,000.00
Mortgage 6 per cent. gold bonds.....	2,804,000.00
General mortgage 6 pr. ct. gold bonds.....	4,518,000.00
Second general mortgage 5 per cent. bonds.....	3,000,000.00
Second general mortgage 6 per cent. bonds.....	1,000,000.00
Total funded debt (\$102,238 pr mile).....	15,438,000.00
Bills payable.....	\$376,557.77
Interest and rentals accrued, December accounts.....	709,629.24
Other liabilities.....	116,498.96
	1,202,685.97
Total (\$148,892 per mile).....	\$22,482,685.97

Road, equipment and real estate (\$115,330 per mile).....	\$17,414,857.77
Stocks of leased lines at cost.....	3,048,680.82
Other stocks and bonds.....	795,605.68
Materials and supplies.....	229,362.77
Cash and balances due.....	625,765.35
Profit and loss.....	368,413.58
	22,482,685.97

During the year the board has sold \$1,635,000 of the consolidated general mortgage bonds. The amount realized was \$1,433,404.16, of which \$500,000 was used to pay off the York & Cumberland bonds due Jan. 1, 1877, the rest to reduce the floating debt. Bills payable were reduced \$968,764.79 during the year.

The earnings for the year were as follows:

	1877.	1876.	Inc. or Dec.	P. c.
Passengers.....	\$698,177.40	931,782.92	Dec.	\$233,605.52 25.7
Freight.....	3,152,692.66	3,230,288.32	Dec.	77,595.66 2.4
Express and mails.....	115,490.34	114,436.11	Inc.	1,054.23 0.9
Miscellaneous.....	104,048.38	93,418.15	Inc.	12,630.23 13.5
Total.....	\$4,070,387.78	\$4,369,925.50	Dec.	\$299,537.72 6.9
Expenses.....	2,745,924.84	3,242,325.62	Dec.	496,400.78 15.3
Net earnings \$1,324,462.94.....		\$1,127,599.88	Inc.	\$196,863.06 17.5
Gross earn. per mile.....	12,485.85	13,404.68	Dec.	918.83 6.9
Net earn. per mile.....	4,062.77	3,458.90	Inc.	603.87 17.5
Per cent. of expenses.....	67.46	74.20	Dec.	6.74 9.1

These earnings were divided among the several lines as follows:

	Gross earn.	Net earn.	Earn. per mile.	P. c. of exp.
Main Line.....	\$2,629,809.97	\$877,434.20	\$19,056.59	66.83
Green Spring Branch.....	7,427.87	1,128.74	825.32	85.12
Shamokin Div.....	293,586.33	156,054.06	10,485.65	40.85
Elmira Div.....	532,166.20	140,983.78	7,070.05	74.40
Chemung Div.....	196,772.93	54,919.32	8,944.22	72.08
Canandaigua Div.....	390,612.48	93,942.81	8,310.90	76.07
Totals.....	\$4,070,387.78	\$1,324,462.94	\$12,485.85	67.46

The result of the year's operations was as follows:

Net earnings.....	\$1,324,462.94
Dividends and interest.....	184,814.33
Penn. R. R. contribution for operating Elmira, Chemung and Canandaigua divs.....	63,770.23
Total.....	\$1,573,047.50
Interest, discount, ground rents.....	\$1,007,476.40
Interest on Shamokin Valley & Pottsville bonds.....	145,625.30
Shamokin Valley & Pottsville, rental and interest on equipment.....	63,960.54
Elm. & Wm'sport, rental and interest on equipment.....	204,164.53
Chemung R. R., rental and interest on equipment.....	37,422.97
Elm. Jeff. & Can., rental and interest on equipment.....	54,691.31
	1,513,342.11

Balance to profit and loss..... 61,705.39

The report says: "It will be observed that in the above statement of the fixed annual charges for interest, rentals, etc., the item of \$145,625.30, being interest and gold premium upon the \$2,000,000 7-per-cent. gold bonds of the Shamokin Valley & Pottsville Railroad Company, appears for the first time. The interest upon these bonds, heretofore paid by your company, has been charged as an advance against the operations of the coal property owned by the Shamokin Valley & Pottsville Railroad Company, it having been expected that the net earnings of the mines would provide for the advances. It has, however, been decided by your board to charge, hereafter, the interest on these bonds to the annual income account, crediting to that account the net earnings derived from the operations of the coal property. Accordingly, the entire amount of accrued interest to Dec. 31, 1876, has been charged to profit and loss, and the interest for 1877 has been charged to the income account for the year, as already stated."

"Notwithstanding the fact that this large additional charge has been made to the income account, and that no credit has been taken for the net earnings of the coal property, which have not as yet been paid over to your Treasurer, amounting to \$31,599.91; notwithstanding, also, the expenditure above stated of \$135,433.74 for betterments to your property, it will be observed that the net earnings of the company have exceeded the charges of all kinds against the same by the sum of \$61,705.39."

"Your board considers this to be a satisfactory result when the continued depression of trade is considered, affecting very greatly, as it does, the coal and iron interests, which supply so large a proportion of the traffic of your lines. \* \*

"A reference to the Treasurer's financial statement will show that the profit and loss account is now debited with a balance of \$368,413.58."

"This has resulted from charging directly to this account the discount on all the company's bonds sold, and all the interest paid (prior to 1877) on the bonds of the Shamokin Valley & Pottsville Railroad Company; your board, after a very careful consideration of the subject, having deemed it wise to adopt this course. They have also directed that sundry old claims paid, together with the depreciation of certain securities held by the company to represent the same at their market value, be charged to profit and loss."

The profit and loss account is as follows:

Credit balance, Dec. 31, 1876.....	\$176,546.77
Insurance fund.....	1,000.00
Rebate of Inter-State tonnage tax from State of Pennsylvania.....	31,437.28
Net income for 1877.....	61,705.39
Total.....	\$270,680.44

Discount on \$1,635,000 bonds sold.....	\$201,595.84
Suspense account, balance of discount on bonds sold before 1877.....	88,719.15
Depreciation of securities held.....	52,378.17
Interest on Shamokin Val. & Pott. bonds, charged prior to 1877.....	238,010.68
Old judgment claims paid.....	58,390.18
	639,103.02

Debit balance, Dec. 31, 1877..... \$368,413.58

The traffic statements for the year are as follows:

	1877.	1876.	Inc. or Dec.	P. c.
Passenger's carried.....	1,479,692	1,903,645	Dec.	423,953 22.3
Passenger's mile age.....	25,726,708	43,401,086	Dec.	17,674,318 40.7
Tons freight moved.....	6,160,171	5,579,024	Inc.	581,147 10.4
Tonnage mileage.....	277,732,734	253,552,485	Inc.	24,200,249 9.5
Av. receipt per pass. per mile.....	2.714 cts.	2.146 cts.	Inc.	0.568 ct. 26.5
Av. cost per pass. per mile.....	2.610 "	2.105 "	Inc.	0.505 " 24.0
Av. net receipt per mile.....	0.104 "	0.041 "	Inc.	0.063 " 153.6
Av. cost per ton per mile.....	1.135 "	1.274 "	Dec.	0.139 " 10.9
Av. net per ton per mile.....	0.747 "	0.918 "	Dec.	0.171 " 18.6
Av. net per ton per mile.....	0.388 "	0.356 "	Inc.	0.032 " 9.0

The lowest earning per ton per mile were on the Chemung Division, 0.785 cent, the expense on that division being 0.586, and the profit 0.199 cent. The low passenger rate of 1876 was due to the large Centennial traffic carried at very low rates. The report says:

"The tonnage of the main line of the Northern Central railway was increased 119,556 tons with a decrease in earnings of \$20,521.47."

"On the Shamokin Railroad the increase in tonnage was 249,492 tons; increase in earnings, \$19,922.26. On Elmira Railroad increase in tonnage, 281,794 tons; decrease in earnings, \$25,210.77. On Chemung Railroad decrease in tonnage, 36,494 tons; decrease in earnings, \$29,198.75. On Canandaigua Railroad decrease in tonnage, 33,335 tons; decrease in earnings, \$21,428.67. On Green Spring Branch increase in tonnage, 134 tons; decrease in earnings, \$1,158.26."

The coal tonnage of each of the lines was as follows:

	1877.	1876.	Inc. or Dec.	P. c.
Northern Central.....	832,172	899,150	Dec.	66,978 7.8
Green Spring Branch.....	5,748	8,886	Dec.	3,138 35.2
Shamokin Branch.....	818,178	587,274	Inc.	230,904 39.3
Elmira & Wm'sport R.R.....	613,429	377,522	Inc.	235,904 62.5
Chemung R. R.....	706,520	740,756	Dec.	34,236 4.6
Elmira, Jeff. & Can. R.R.....	524,068	552,651	Dec.	28,583 5.2

In general, there was a decrease in the anthracite trade northward and an increase in that to Baltimore; a considerable decrease in the Blossburg bituminous trade and an increase in the anthracite as far as Elmira and the Tioga railroad trade. The report says:

"It will be observed that with an increase of over 9 per cent. in the tonnage mileage there was an actual decrease of \$77,595.66 in the aggregate freight receipts as compared with 1876. This decrease is entirely due to the low rates upon coal by reason of the ruinous competition throughout the year between the great anthracite coal-mining and carrying companies."

"The good results expected from the erection of the grain elevator at Baltimore have been fully realized. Not only have the facilities it affords enabled your company to secure a much larger proportion of the grain traffic than ever before, but it has in itself proved a profitable investment, the net revenue received for handling and storing the grain having since it was put in operation yielded over 7 per cent. interest on the entire cost. \* \*

"The following table will show the results for 1877 of the



**Mineral Railroad & Mining Company:**

Receipts.....	\$856,655.89
Expenses, taxes, etc.....	801,954.42
Net earnings for 1877.....	\$54,701.47
Less amount paid for royalty on coal.....	7,301.50

Net profits for the year.....\$47,399.97

"This company produced 309,720½ tons of coal, the average price received at point of sale per ton being \$2.71½. Two-thirds of the net revenue of the Mineral Railroad & Mining Company belongs to your company, and one-third to the Pennsylvania Railroad Company under the existing arrangements between it and your company, by which each contributed certain coal lands to be operated by the Mineral Railroad & Mining Company in the proportions stated. In addition to the profits there is an undistributed account for 1876 of about an equal amount, which will appear in the accounts of this company in the statement for 1878."

**Boston & Albany.**

This company owns a main line from Boston to Albany, 201.65 miles, and seven branches, in all 47.98 miles, making 249.63 miles owned. It works under lease the Pittsfield & North Adams, 18.65 miles; the Ware River, 49 miles, making 67.65 miles owned and 317.28 worked. Train service is furnished to the North Brookfield Branch, 4.25 miles. The report is for the year ending Sept. 30.

The equipment consists of 243 engines; 190 passenger and 54 baggage and postal cars; 4,808 merchandise cars, 517 other cars and 11 snow-plows. There was an increase during the year of 4 engines, 2 snow-plows, 246 merchandise and 8 other cars.

The general balance sheet is as follows:

Stock (\$80.119 per mile).....	\$20,000,000.00
Bonds (\$28.072 per mile).....	7,000,000.00
Unclaimed dividends and interest.....	31,827.75
November dividends and January rentals.....	835,025.00
Notes payable.....	1,003,056.75
Profit and loss.....	2,380,395.07
Total (\$125,180 per mile).....	\$31,250,904.57
Road and equipment (\$110,220 per mile).....	\$27,514,116.50
South Boston property.....	505,098.22
Real estate and land.....	119,078.06
Hudson River bridges.....	475,485.00
West Stockbridge stock.....	13,000.00
Notes and balances receivable.....	510,974.45
Materials and cash.....	2,112,551.44
	31,250,904.57

The annual interest charge is \$470,000, as \$5,000,000 of the bonds bear 7 and \$2,000,000 bear 6 per cent. interest. The earnings for the year were as follows:

	* 1876-77.	1875-76.	Inc. or Dec.	P. c.
Passengers.....	\$2,386,471.84	\$2,420,092.50	D. \$34,620.66	9.1
Freight.....	3,790,780.94	3,886,131.64	D. 95,350.70	2.5
Mails and other sources.....	602,357.25	561,934.30	I. 40,422.95	7.2
Total.....	\$6,779,610.03	\$7,074,758.44	D. \$295,148.41	4.2
Expenses.....	4,612,765.95	4,682,904.04	D. 70,228.09	1.5
Net earnings.....	\$2,166,844.08	\$2,391,764.40	D. \$224,920.32	9.4
Gross earnings per mile.....	21,367.91	22,298.15	D. 930.24	4.2
Net earnings per mile.....	6,829.44	7,538.34	D. 708.90	9.4
Per cent. of exps.....	68.04	68.19	I. 1.85	2.8

The income account for the year is as follows:

Net earnings.....	\$2,164,844.08
Interest.....	484,483.20
Dividends, 8 per cent.....	1,000,000.00
Rentals.....	71,250.00
	2,155,733.20

Surplus for the year.....	\$11,110.88
Accretions to sinking fund.....	987.15
Surplus Oct. 1, 1876.....	3,692,396.83
Total.....	\$3,704,494.86
Uncollectible accounts.....	\$16,454.78
Reduction of equipment account.....	1,307,045.78
	1,324,099.79

Surplus, Oct. 1, 1877.....\$3,380,395.07

The traffic for the year was as follows:

Reduction of equipment account.....	1,307,040.75	1,324,099.70		
Surplus, Oct. 1, 1877.....		\$2,380,395.07		
The traffic for the year was as follows:				
	1876-77.	1875-76.	Inc. or Dec.	P. c.
Train mileage, passenger.....	1,308,903	1,420,547	D.	21,644
Train mileage, freight.....	3,566,163	3,477,073	I.	88,490
Train mileage, other.....	80,662	85,060	D.	4,998
Total.....	5,045,728	4,983,880	I.	61,848
Through passengers.....	60,077	69,099	D.	9,022
Local.....	5,233,274	5,513,653	D.	280,379
Total.....	5,293,351	5,583,352	D.	290,001
Passenger mileage.....	103,278,136	110,644,410	D.	7,366,284
Tons through freight.....	881,265	833,268	I.	47,997
Tons local freight....	1,720,392	1,708,006	I.	12,386
Total.....	2,601,657	2,541,274	I.	60,383
Tonnage mileage.....	313,822,671	301,624,988	I.	12,197,683
Barrels flour, Albany to Boston.....	1,144,116	1,024,784	I.	119,332
Barrels from Albany to local points.....	849,831	836,280	I.	13,551
Av. pass. train load, No.....	73.82	77.80	D.	4.07
Av. freight train load, tons.....	88.00	86.63	I.	1.37
Av. cost per passenger or ton of freight per mile.....	0.883 ct.	0.956 ct.	D.	0.073 ct.

In spite of the decrease last year the average passenger train load reported is the largest that we can now recall.

The report says: "Notwithstanding the general depression of commerce and trade, the total number of tons carried one mile over our road during the past year has never been exceeded except in a single instance, and our tonnage from Albany to Boston is the largest ever made."

"The road-bed and rolling stock are in excellent condition, having been the object of most favorable comment by those who have had occasion to examine and compare them with those of other companies. About 3,000 tons of steel rails have been substituted for iron within the year, and, excepting a distance of less than 10 miles, we have now a steel-laid roadway from Boston to Albany. In accordance with the votes of our stockholders, the contracts for leasing the Pittsfield & North Adams Railroad and the North Brookfield Railroad have been executed. The losses obtained by burning the shops of the company at Springfield in September last was covered by insurance. A full settlement has been agreed upon with the companies, and the buildings are now substantially replaced."

**Union Pacific.**

This company's report for the year ending Dec. 31, 1877, gives the length of its line as follows:

Miles.	
Omaha to Ogden.....	1,034.4
Council Bluffs to Omaha, bridge and approaches.....	3.0
Ogden to junction with Central Pacific.....	5.0
Total.....	1,042.4

The equipment consists of 168 engines; 25 first-class passenger, 80 second-class and emigrant, 23 sleeping, 9 mail, 9 express and 23 baggage cars; 1,887 box; 120 stock and charcoal, 10 fruit, 1,000 flat, 500 coal, 4 outfit, 1 oil-tank and 85 way-cars. It was increased during the year by 2 baggage, 42 box, 4 outfit and 1 oil-tank car.

The bonded debt is reported as follows at the close of the last two years:

1877.	1876.
First mortgage, 6 per cent.....	\$27,231,000
Sinking fund, 8 per cent.....	14,045,000
Income, 10 per cent.....	1,000
Land grant, 7 per cent.....	7,324,000
Omaha Bridge, 8 per cent.....	2,225,000
Total.....	\$50,826,000

The decrease during the year was \$278,000. This statement does not include the Government subsidy bonds. No statement of the amount of stock is made, and no general balance sheet given. The bonded debt, as stated above, was \$48,759 per mile at the close of the year.

The earnings for the year were as follows, excluding those of the Omaha Bridge:

	1877.	1876.	Inc. or Dec.	P. c.
Commer. pass.	\$3,306,505.02	\$4,083,987.75	D. \$777,482.73	19.0
Gov't	233,251.25	223,614.78	I. 9,636.47	31.1
Com'l freight.	6,458,514.85	6,219,496.60	I. 239,018.25	3.8
Gov't	392,208.21	374,387.65	D. 17,820.56	3.3
Company	776,957.47	710,239.25	I. 66,718.22	9.4
U. S. mail.	596,775.00	574,139.00	I. 22,636.00	3.9
Express.	430,701.08	502,738.42	D. 72,037.34	14.3
Car serv., bal.	31,301.38	22,043.74	I. 9,257.64	41.6
Miscellaneous.	257,221.33	195,972.60	I. 61,248.73	32.2
Rents	22,170.53	24,326.53	D. 2,156.00	8.8
Total.	\$12,473,203.86	\$12,886,858.84	D. \$413,654.98	3.2
Expenses.	5,273,421.69	5,268,211.30	I. 5,210.39	0.1
Net earnings.	\$7,199,782.17	\$7,618,647.54	D. \$418,865.37	5.5
Gross earnings per mile.	12,000.39	12,398.36	D. 397.97	3.2
Net earnings per mile.	6,920.86	7,320.85	D. 402.99	5.5
Per cent. of ex.	42.28	40.88	I. 1.40	3.4

Payments from net earnings for interest and dividends were as follows:

Interest on bonds.....	\$3,285,110
Dividends on stock, 8 per cent.....	2,030,600
Total.....	\$5,315,710

The amount expended for new construction and equipment was \$229,479.49, the principal items being \$71,611.34 for depot at Council Bluffs; \$58,453.74 for general offices at Omaha; \$29,014.07 for Dale Creek Bridge, and \$39,649.85 for new equipment.

The expenses for 1877 were decreased by the smaller expense for maintaining bridges resulting from the filling in of trestles in former years, and by the very light cost of removing snow; they were increased by unusually heavy renewals of track in steel. There were laid last year 11,452 tons steel rails, 5,489 tons re-rolled iron rails, 377,504 pine ties, and 92,939 hard-wood ties. There are now 192 miles of main track laid with steel. The re-rolled iron rails were supplied by the company's mill at Laramie, the average cost of re-rolling being \$15 per ton. Contracts have been let for 10 new engines and 250 freight cars.

The large decrease in passenger earnings is attributed: "1. To the Centennial held in 1876, and the large increase of travel incident thereto, especially from California."

"2. To the failure of the crops in California in 1877, which paralyzed business throughout that State, and temporarily checked westward emigration."

"The increase of freight is derived principally from the local business of the road, which is growing very rapidly, the cattle trade alone advancing with rapid strides toward being the most important traffic of the company. The live stock shipments during the year show an increase of nearly 100 per cent. over those of 1876. The crops along the east end have been remarkably good, and the condition of Nebraska may be said to be unusually prosperous."

The earnings and expenses of the Omaha Bridge were as follows:

1877.	1876.	Inc. or Dec.	P. c.
Earnings.....\$475,273.16	\$482,602.88	D. \$7,329.72	1.6
Ordinary expenses.....174,944.48	192,231.29	D. 17,286.81	9.1
Rip-rapping.....42,326.54	34,267.16	I. 8,059.38	23.5
Replacing two spans.....61,090.99	.....	I. 61,090.99	.....
Total.....\$278,071.01	\$269,498.45	I. \$8,572.56	23.0

Net earnings.....\$196,602.15	\$256,364.43	D. \$59,762.28	23.3
Interest on bonds.....190,655.53	225,066.53	D. 34,411.00	11.3
Bonds redeemed.....54,000.00	51,000.00	I. 3,000.00	5.9
Total.....\$253,955.63	\$276,066.53	D. \$22,110.90	8.1

Deficit.....\$57,053.48

Two spans next the Iowa side were carried away by a tornado Aug. 25, 1877. Had it not been for the cost of replacing these, the bridge would have showed a profit.

The traffic of the year was as follows:

1877.	1876.	Inc. or Dec.	P. c.
Locomotive mileage.....5,753,729	5,578,000	I. 175,729	3.2
Cost per mile run.....28.55 cts.	32.21 cts.	D. 3.66 cts.	11.4
Passengers carried.....185,691	202,048	D. 16,357	8.4
Passenger mileage.....82,911,198	102,055,041	D. 19,143,843	19.2
Passenger mileage, way.....24,922,173	25,377,883	D. 455,710	1.8
Total.....107,833,371	128,032,924	D. 20,199,553	15.8
Tonnage mileage, through.....155,706,635	177,591,469	D. 21,884,834	12.3
Tonnage mileage, way.....178,938,235	114,410,607	I. 64,527,628	56.4
Total.....334,644,870	292,002,076	I. 42,642,794	14.6

The average rate per ton per mile last year was as follows, in cents:

1877.	1876.	Inc. or Dec.	P. c.
Through.....1.49	1.69	D. 1.20	1.81
Local, including coal.....1.53	3.15	D. 1.62	1.06
Local, excluding coal.....1.92	3.19	D. 1.27	2.62
Total, including coal.....1.52	2.23	D. 0.71	1.02
Total, excluding coal.....1.74	2.29	D. 0.55	2.04

The total coal mined by the company last year was 275,450 tons, at an average cost of \$1.13½ per ton, an increase of 10,709 tons at a decrease in cost of 28½ cents per ton. The sales of coal for private use were 92,290 tons, an increase of 27,245 tons over 1876. The average receipt per ton sold was \$6.266. The suit of Wardell against the company has been decided in favor of the company, releasing it from the old oppressive contract with the Wyoming Coal & Mining Company, and giving it full control of the coal lands along its line.

The Land Department reports sales for the year of 60,016 acres for \$343,768, an average of \$4.98 per acre. The total sales up to Dec. 31 were 1,318,280 acres for \$5,717,127, an average of \$4.336 per acre. The total receipts up to Dec. 31, 1877, were \$6,265,238.76; expenses, \$1,412,486.49, leaving net proceeds of land grant \$4,852,752.27. Of the whole issue of \$10,400,000 land-grant bonds, \$3,076,000 have been canceled, leaving \$7,324,000 outstanding. Against these the company holds \$3,009,117.30 in land contracts, and \$406,035 cash, besides 10,764,947 acres of unsold lands.

The sales do not grow very fast, however, as there were contracts for 70,594 acres canceled or forfeited in 1877, rather more than the number of acres sold.

**Cleveland, Columbus, Cincinnati & Indianapolis.**

This company worked the following lines during the year ending Dec. 31, 1877, as during the previous year:

Miles.	
Columbus Division, Cleveland, O., to Columbus.....	138.0
Indianapolis Division, Gallon, O., to Indianapolis, Ind.....	203.0
Cincinnati Division, Delaware, O., to Cincinnati.....	130.5
Total.....	471.5

The lines owned are the Columbus and Indianapolis divisions and 50 miles of the Cincinnati Division, from Delaware to Springfield, 391 miles in all. The 80.5 miles from Springfield to Cincinnati are leased from the Cincinnati & Springfield Company. There are 20.51 miles of second track and 103.71 miles of sidings on the line owned.

The equipment consists of 139 engines; 48 passenger, 8 sleeping, 2 parlor, 16 baggage and 4 mail cars; 1,841 box, 265 stock, 632 flat, 676 coal and 65 caboose cars; 1 pay, 1 directors', 5 wrecking and 3 tool cars. There are also in use 16 engines, 15 passenger, 6 baggage, 2 postal, 100 box, 100 stock, 100 coal and 11 caboose cars belonging to the Cincinnati & Springfield Company.

The general balance sheet is as follows:

Stock.....	\$15,000,000.00
Less amount owned by company.....	8,200.00
Stock outstanding (\$38.342 per mile).....	\$14,991,800.00
Bonds (\$15.486 per mile).....	6,055,000.00
Bills payable, bills audited, unclaimed dividends.....	651,570.06
Balance to surplus account.....	452,961.92
Total (\$56,653 per mile).....	\$22,151,331.98
Construction (\$43.474 per mile).....	\$17,908,642.22
Materials.....	319,035.06
Cash and cash assets.....	781,089.81
Other assets, stocks and bonds.....	2,990,757.30
" quarry, wood-lands, etc.....	52,206.99
	22,151,331.98

The bonded debt was decreased by \$59,000 during the year. Construction account was increased by \$20,083.80, chiefly for new equipment and shop improvements.

The earnings for the year were:

	1877.	1876.	Inc. or Dec.	P. c.	
Freight.....	\$2,453,893.76	\$2,537,009.40	D.	\$83,205.64	3.3
Passengers.....	680,918.78	800,828.26	D.	119,909.48	15.0
Mail and exp's.....	150,212.31	157,174.77	D.	6,962.46	4.4
Rents.....	41,532.61	49,655.37	D.	8,122.76	16.3
Interest and dividends.....	107,888.60	131,790.06	D.	23,901.37	18.1
Total.....	\$3,434,356.15	\$3,676,457.86	D.	\$242,101.71	6.6
Work'g exp's.....	2,770,344.28	2,801,565.02	D.	31,220.74	1.1
Taxes.....	175,232.45	171,974.32	I.	3,258.13	1.9
Total.....	\$2,945,576.73	\$2,973,539.94	D.	\$27,963.21	1.0
Net earnings.....	\$488,779.42	\$702,917.02	D.	\$214,138.50	30.5
Gross earn. per mile.....	7,283.89	7,797.36	D.	513.47	6.6
Net earn. per mile.....	1,036.65	1,400.81	D.	454.16	30.5
Per cent. work'g exp's.....	80.08	76.20	I.	3.88	5.1
Per cent. exp's. and taxes.....	85.50	80.88	I.	4.71	5.8

The income account for the year was as follows:

Balance, Dec. 31, 1876.....	\$404,803.86
Earnings for 1877.....	3,434,356.15
Total.....	\$3,839,160.01

Working expenses.....	\$2,770,344.28
Taxes.....	175,232.45
Interest on bonds.....	420,877.50
Sundry accounts charged off as worthless.....	103,743.88
	3,470,198.09

Balance, Dec. 31, 1877.....\$452,961.92

The net earnings exceeded interest paid by \$61,901.92. The item of advances to Cincinnati & Springfield Company increased \$178,606.10 during the year. Advances to the Indianapolis & St. Louis Company under contract were \$74,000.

The traffic of the year was as follows:

1877.	1876.	Inc. or Dec.	P. c.</
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